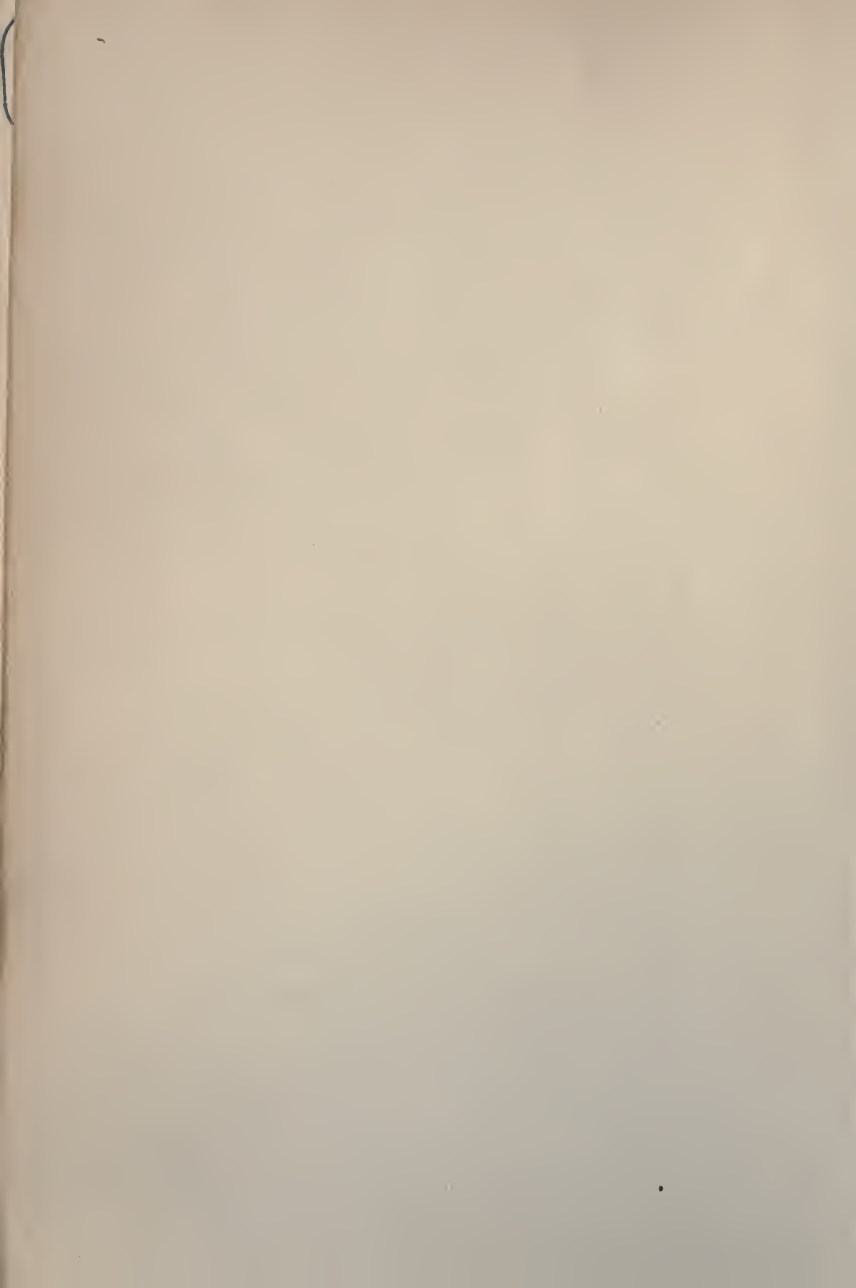
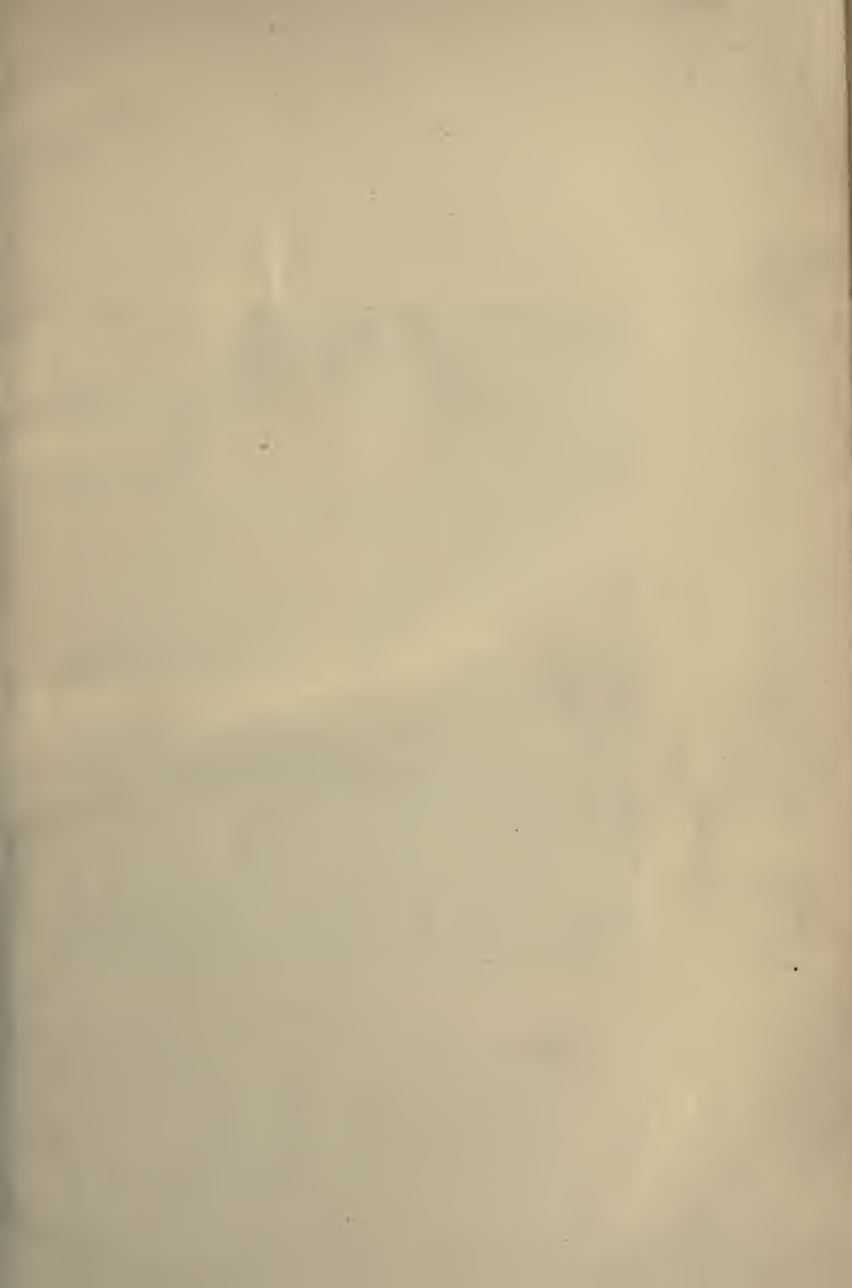


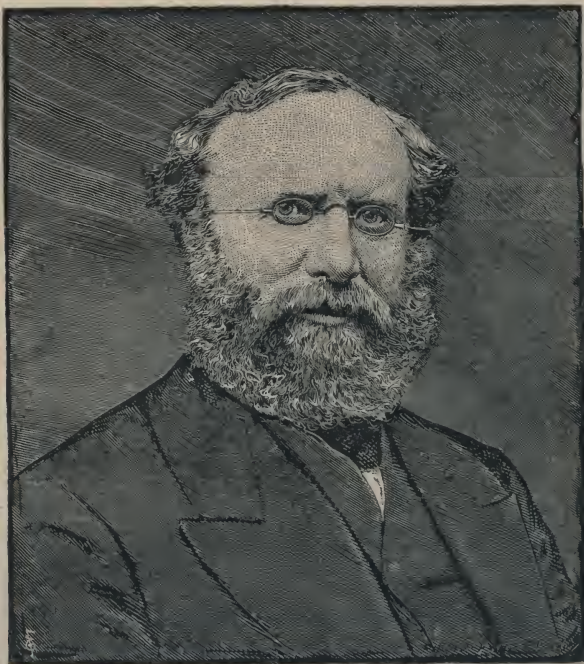




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ROBERT BARNWELL ROOSEVELT.

THE
GAME FISH,
OF THE
NORTHERN STATES AND BRITISH PROVINCES.

WITH AN
ACCOUNT OF THE SALMON AND SEA-TROUT FISHING OF CANADA AND
NEW BRUNSWICK, TOGETHER WITH SIMPLE DIRECTIONS
FOR TYING ARTIFICIAL FLIES, ETC., ETC.

BY ROBERT BARNWELL ROOSEVELT,
AUTHOR OF "SUPERIOR FISHING," "THE GAME BIRDS OF THE NORTH," "FIVE
ACRES TOO MUCH," "POLYANTHUS," ETC., ETC.

ILLUSTRATED.



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PREFACE.

I have said in the first paragraph of this book that a preface is a sort of apology, and viewing it in that light, my apology for writing this, is to explain that the demand for a new edition seems to be so large that I ought to comply with it. In doing so, a great deal of fresh matter has been added to the original text, and the information and directions have been brought down to the present time. The portion relating to the propagation of fish has been entirely remodelled and rewritten, so that nothing of the original matter has been left. That was composed before the art of fish-culture had been developed, and before a single fishery commission had been appointed in this country. Considerable advance has also been made in the matter of tackle, rods, and reels, all of which are far better manufactured now in this country, than in any other part of the world, even in that birth-place of the fishing art, England herself.

Having always been an enthusiast with rod and gun, attributing to the sports of the field and stream the retention of good health amid confining and sedentary occupations, I made the preparation of this work a labor of love, and have with time come to be more than ever impressed with the importance of out-door recreations. Inspiration acquired from the woods and streams, and vigor earned by exercise in the pure air of heaven are good for the soul as well as for the body.


Take sportsmen all in all, and there is not only a better physical condition noticeable in their muscles, but they bear a more universal humanity in their hearts than is to be found with mere business men or even among the literary or learned. A sympathy exists between them not often to be found in other classes of the community. Their grasp of welcome seems more hearty, and their expressions of interest more sincere. Certainly I have received more cordial kindness from them than from any other people whom I have ever met.

I was one of the first to press on the State and National Governments the importance of establishing fishery commissions, and being myself appointed on that of the State of New York when it was created, in the year 1867, and having remained on it ever since, I have necessarily kept up with the times, and all improvements which have been made either in the science of fish-culture or in the tools and methods of fishing.

Looking back, and still more I may say, looking forward to what the future will bring forth, I have a right to claim that in aiding the cultivation and protection of the objects of the sportsman's pursuit, and the means of his pleasure, in protesting against their unreasonable and improper slaughter, and in describing the most legitimate and scientific methods, and taking them, I have conferred some advantage upon mankind as well as amused some idle hours.

THE AUTHOR.

March, 1884.



GAME FISH.

CHAPTER I.

INSTRUCTION.

I HAVE always considered a preface or introduction a species of apology, and not intending that the following sketches shall need any apology, I shall write no introduction; but an explanation of the scientific distinctions and divisions of fishes may not only be appropriate but highly instructive, if my readers be as ignorant as I think them.

It has been a matter of serious reproach by the naturalists against the sportsmen, that the latter, instead of adopting a uniform nomenclature, call a bird or fish in one section of our country by a different name from that under which it is known in another; that a Quail and Black Bass at the North become a Partridge and Trout at the South. The sportsmen, conscious of the justness of the reproach, have submitted quietly to the learned stones of reproof hurled at them, and scarcely dared to suggest that their persecutors lived in the most fragile of glass houses; that naturalists were liable to

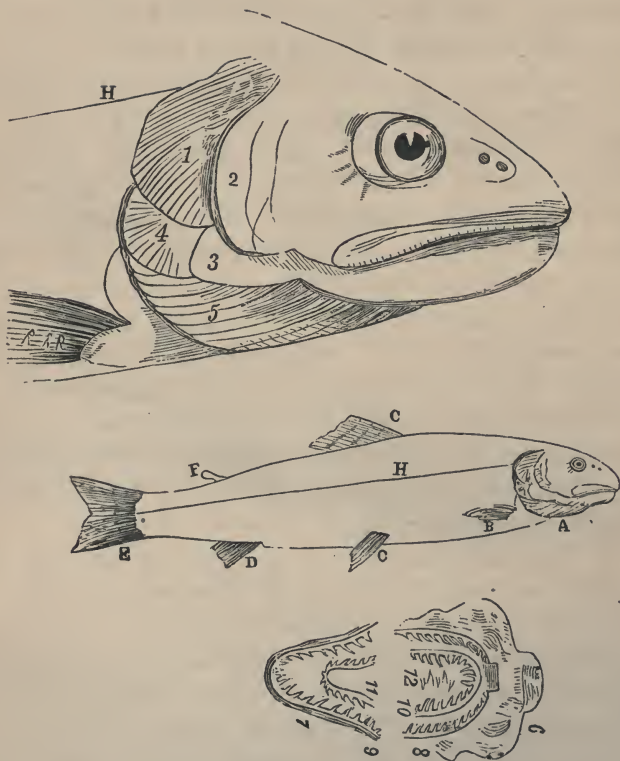
the same accusation, and that there is hardly a fish, bird or beast that they have not called by several different names. Are not the contentions of Ortyx and Perdrix known to all? Is it quite certain, when we catch an Otsego Bass, whether we catch a *Coregonus* Otsego or a *Coregonus* Albus, or even a *Salmo* Otsego? Is it perfectly ascertained from a scientific point of view that we catch anything? Who does not know that a Tautog is a Blackfish, or would be materially instructed by hearing him called a *Tautoga Americana*? Scientific men vie with one another in creating new names, the most useless things in Christendom; while sportsmen are happy to take them, the game, as they find them. The first are guilty of faults of commission, the latter of omission. The language of each is Greek to the other.

The writer of these sketches, knowing just sufficient Greek to be a sportsman, and yet able to translate with the help of a dictionary, offers, from the want of one more worthy, to conciliate all differences. His plan is to translate all terms that are translatable, and to omit altogether those that are not, trusting that they will never be missed. His intention at first was to write a noble work on natural history that would carry his name in letters of gold, as a public reformer and benefactor, to latest posterity; but finding, on reviewing his stores of information, that he knew but little on the subject, he was compelled to relinquish the idea. Being therefore nothing but a gentle angler, instead of instructing the universe, he is content to amuse a small circle of lovers of sporting anecdotes, and, provided he receives it, will be content with their approval. As, however, one fool

can always teach another something, the writer feels impelled to mingle a little instruction in doses to suit the weakest stomach, that those who have not skipped this chapter on account of its title, may at least receive something for their perseverance. They need not suppose for a moment that the writer pretends to insist upon what he shall write as infallible, but where his readers differ from him, is perfectly willing to admit that he is entirely mistaken; the buyer of a book is always right, the author *a toujours tort*.

He supposes—let there be no misunderstandings when he accidentally uses a stronger word—that fishes are divided into two great orders, and are distinguished as having bony or cartilaginous skeletons; thus a quawl, provided he be a fish at all, would be a very cartilaginous one, and a catfish with his back fin erected, as the writer has often learned to his cost, is a bony fish.

As the cartilaginous fish are of small account, the reader may forget all about them if he wishes, but he is requested to remember the useful division of those having bony skeletons into the great classes, easily distinguished, of the soft finned and spiny finned, called in foreign languages by the horrible terms *malacopterygii* and *acanthopterygii*—terms unpronounceable except by a Dutchman or a philosopher. These classes are distinguished, as the English words imply, by their having the rays of their fins soft and flexible or hard and spine-like. The investigator may determine their peculiarities by pressing strongly upon the points of the fin rays; if nature intimates that his organism is suffering, the fish is a *acanthop*, etc.; if not, why not.



The location of the fins of the fish mark the subdivisions of the families. The above diagram being supposed to represent a fish, and a Trout at that, *G* is the first back or dorsal fin, *r* the second—in the case of this species, mere rayless, fatty matter; *E* is the tail fin or caudal—the writer, as a married man, naturally avoiding the

latter term on account of its suggestiveness ; d is the anal fin, for which the writer can offer no English substitute ; c are the two ventrals or belly fins ; b is the pectoral or shoulder fin, having a complemental one on the other side of the fish ; and a represents what in learned language are called *branchiostegous* rays, a name that, being translated, means merely gill-rays. What is not in a name ! h is the lateral line. Then bearing in mind the great divisions of soft and hard finned, the subdivisions are distinguished by the fish having the ventrals behind the pectorals and on the abdomen, giving them the name of *abdominal* fish, or before the pectorals, giving rise to the name *jugular* or throat finned, and below the pectorals, giving the name *thoracic* or shoulder-finned fish. Philosophers pay little attention to the dorsal and anal fins, and fish, without losing their identity, can have as many as they please. In caudals, unlike human Caudles, they are restricted to one. There are other fish, such as eels, denominated *apodal* or *footless*, because the lower fins or feet are wholly wanting.

After having examined the texture, number and location of the fins, and counted the number of the rays in each, the naturalist next turns his attention to the hard bony portion of the head, which covers the gills, and opens and shuts as the fish breathes, and which, with the excellent common sense for which naturalists are notorious, he calls the *operculum*. It is divided into the *operculum*, or gill-cover proper, No. 1 ; the *pre-operculum*, or fore gill-cover, No. 2 ; the *inter-operculum*, or middle gill-cover, No. 3 ; and the *sub-operculum*, or under gill-cover, No. 4. The head, in the foregoing diagram, is intended

to represent the head of a trout, weighing a pound and a half, caught at Phillipse's Pond, near Smith Town, Long Island. The gill-rays are shown at No. 5. The divisions of the gill-cover are faintly marked in the real fish, and require some study.

Lastly, the naturalist examines a fish as a jockey does a horse, by looking at his teeth, and with about equally satisfactory results. They both are bitten, whether the term be used in a literal or metaphorical sense. The writer once, after catching a large fish, having heard that trout had teeth in their throats, proceeded to investigate. Moved thereto by the spirit of inquiry, he thrust one finger as far as possible down the trout's mouth, and was not a little surprised, as well as pained, to find that the throat was lined with teeth sharper than a serpent's, and arranged in the same manner. They inclined backward, and once having penetrated a substance, would not and could not let go. The writer having suffered the agony that the pursuit of science sometimes involves, after exhausting gentle means of escape, and knowing that he could no more wear a trout, than the old man in the "Decameron" could the protecting ring, with a wrench tore away his hand, a bleeding sacrifice to science. Any reader wishing to ascertain the same facts, may pursue a similar course.

On the foregoing diagram, which represents the arrangement of teeth in the salmon tribe, No. 6 is the upper jaw, and No. 7 the lower; No. 8, the outer teeth in the upper jaw, *superior maxillary*; No. 9, the same in the lower jaw, *inferior maxillary*; No. 10, the inner row of teeth of the upper jaw called learnedly the *pala*

tine; No 11, the teeth on the tongue, and No. 12 those on the roof of the mouth, or *vomerine*. The trout the writer has examined had no visible teeth on the roof of the mouth; they had either suffered from toothache in early life, and applying to a piscatorial dentist, had them drawn, or the teeth had slipped down and settled round their throats as the writer has already mentioned.

The reader, therefore, if he wishes to ascertain the scientific designation of a fish, should in the first place determine the number and location of the fins, the number and quality, as soft or hard, of the rays, the number of gill-rays, the characteristics and position of the teeth, the formation of the gill-cover, and lastly, as every numscull, the drawing teachers assure us, who can write can draw, a drawing of the fish, or at least an outline, should be made. The latter can be done simply by laying the specimen on a sheet of paper, spreading out his fins and running a pencil round him. And then the would-be naturalist will ascertain whether or not he belongs to a class so very liberal as to include salmon and smelt in the same category. He must not forget that it is much more important to study the nature, habits and food of the denizens of the water than to store his memory with their names, "for our philosophers hitherto, instead of studying their nature, have been employed in increasing their catalogues, and the reader, instead of observations or facts, is presented with a long list of names that disgust him with their barren superfluity."

CHAPTER II.

THE AMERICAN TROUT.

THE *Brook Trout*—*The New York Charr*—*Salmo fontinalis*.—Salmon tribe; ventrals in abdomen, rays soft.

The shoulder and first back fins have each eleven rays; the second back fin is mere fatty matter and rayless, the characteristic of the salmon tribe; the ventral has eight, the anal fifteen, and the tail nineteen rays. The back is dusky green, mottled with yellow spots; growing lighter on the sides, where the spots have irregularly a beautiful blue or carmine speck in the centre; the belly is silver white, with a roseate tinge as it fades into the darker colors of the sides; the shoulder fins are yellowish at the base, the ventrals yellowish red, the anal reddish, and in all the rays are dusky. The gill-covers have no defined spots.

The body is covered with delicate scales that will escape all but the strictest observation. The teeth are on the tongue and throat, but none on the roof of the mouth discernible to the naked eye; there is an outer row on the lower jaw, and an inner and outer row on the upper jaw. This fish is so well known to the public from its extensive distribution through the northern States, and so totally dissimilar from the Perch and Bass, mis

called Trout at the South, that a more particular description does not seem necessary.

Another fish taken at the North in the smaller lakes is called Red Trout, and attains the weight of twenty-five pounds. It is rare, and would appear to be an undescribed species, differing from the trout of the brooks and lakes, and not generally known even to sportsmen. A fish of a somewhat similar character was on exhibition at an eating-house in this city, but appeared to have been scaled. It was three feet six inches long, and weighed eighteen pounds. The back was very dark, the sides being of a lighter neutral tint, without any spots. There were a number of vomerine teeth, and the fin-rays, as far as could be ascertained by a cursory examination, were—

Br. 12; D. 13; P. 11; V. 8; A. 11; C. $19\frac{5}{8}$.

This fish was said to have been taken in Maine, and differed entirely from the ordinary brook and lake trout. The fin-rays of the brook trout, as scientifically given by De Kay, are—

D. 13.0; P. 12; V. 8; A. 10; C. $19\frac{5}{8}$.

Trout are in season from the first of February to the first of September in the Long Island streams; from April to September in those streams of the New England States that communicate with salt water; and from May till September in the upland waters of the middle and eastern States.* There is but one mode of taking them—namely, with the fly; although it is said poachers and pot hunters capture them with worms, minnows, nets, and even with their own roe. These villanies are not at present punished with death nor even imprisonment

* These periods do not refer to the game laws.

for life; but our legislature is looking into the matter, and there is no telling how soon such statutes may be passed.

How splendid is the sport, to deftly throw the long line and small fly with the pliant single-handed rod, and with eye and nerve on the strain, to watch the loveliest darling of the wave, the spotted naiad, dart from her mossy bed, leap high into the air, carrying the strange deception in her mouth, and turning in her flight, plunge back to her crystal home, with the cruel hook driven into her lips by a skillful turn of the angler's wrist; to meet and foil her in her fierce and cunning efforts to escape, paying out the line as she rushes away resistless, meeting her in emergencies firmly and steadily, till the tip crosses the but, when she insists upon reaching the old stump or the weedy bottom; to slack the line when she leaps into air, trying to strike it with her tail; and above all, to watch the right moment, and keeping her head well up, to bring the beautiful prize quickly and steadily to the net! There may be others who have killed more and larger trout than myself, there may be others who can cast a longer line and lighter fly; but there are none who will work more steadily or who can enjoy it more intensely.

There are innumerable rules applicable to trout fishing and innumerable exceptions to each; neither man nor fish is infallible. A change of weather is always desirable: if it has been clear, a rainy day is favorable; if cold, a warm one; if the wind has been north, a southerly one is advantageous; a zephyr if it has been blowing a tornado. Generally, in early spring, amid the fading

snows and blasts of winter, a warm day is very desirable; later, and in the heats of summer, a cold, windy day will insure success. Dead calm is dangerous, although many trout are taken in water as still, clear and transparent as the heavens above. The first rule is never to give up; there is hardly a day but at some hour, if there be trout, they will rise, and steady, patient industry disciplines the mind and invigorates the muscles. A southerly, especially a southeasterly wind, has a singular tendency to darken the surface, and in clear, fine waters is particularly advantageous; a southwester comes next in order; a northeaster, in which, by the by, occasionally there is great success, is the next; and a northwester is the worst and clearest of all. Give me wind on any terms, a southerly wind if I can have it; but give me wind. It is not known what quality of the wind darkens the water, it may be a haziness produced in the atmosphere, although with a cloudy sky the water is often too transparent; it may be the peculiar character of the waves, short and broken, as contradistinguished from long and rolling; but the fact is entitled to reliance.

Slight changes will often affect the fish. On one day in June, in the writer's experience, after having no luck till eleven o'clock, the trout suddenly commenced rising, and kept on without cessation, scarcely giving time to cast, till two, when they as suddenly stopped. There was no observable change in the weather, except the advent of a slight haze, the wind remaining precisely the same. I was much disappointed, not having half fished the ground and being prevented, by the numbers that were taken, from casting over some of the largest fish that

broke. As it was, I caught seventy trout in what is ordinarily considered the worst hours of the day. But in this particular, also, the same rules apply as to the warmth of the weather. In early spring it is useless to be up with the lark, even supposing such a bird exists; no fish will break the water till the sun has warmed the air; but in summer, the dawn should blush to find the sportsman napping. In fact, trout will not rise well unless the air is warmer than the water. They do not like to risk taking cold by exposing themselves to a sudden draught.

There is a very absurd impression, that trout will not take the fly early in the season; this is entirely unfounded. As soon as the ice disappears they will be found gambolling in the salt water streams, and leaping readily at the fly. At such times, on lucky days, immense numbers are taken. In March they have run up the sluiceways and are in the lower ponds, lying sullenly in the deepest water; then is the cow-dung, politely called the dark cinnamon, the most attractive fly. In April, May and June they are scattered, and entrapped by the hackles, professor, ibis, and all the medium sized flies. In July and August they have sought the headwaters of navigation, the cool spring brooks, and hide around the weeds and water-cresses, whence the midges alone can tempt them.

Any flies will catch fish, cast in any manner, if the fish are plenty and in humor to be caught. A few feathers torn from the nearest and least suspicious chicken, and tied on an ordinary hook with a piece of thread, will constitute a fly in the imagination of a trout, pro

vided he follows, as he sometimes appears to do, the advice of the young folks, shuts his eyes and opens his mouth. I cannot recommend such tackle, being convinced the most skillfully made is the best; but I do advise simplicity of color. One of the best of all flies is the female cow-dung, made of a dark cinnamon color, and after the pattern used in England; there is a greenish abomination unjustly foisted upon American invention that is worthless. The hackles are in my opinion altogether inferior, except the black-winged hackle, which, of a bright warm day, is irresistible. The ibis and professor, dressed *à l'Américaine*, with yellow floss body and red tail, are both excellent flies. The coachman is the best evening fly, and will attract trout long after the angler can see to strike them, and when the sound of their plunge alone entices him to continue his efforts. The May and stone flies are good, and of late years a fly of mixed red and black, with wings, called by some, from his colors, the devil-fly, has come into vogue. The palmers are only to be despised and avoided. In summer, of the midges the yellow sally, the alder fly, the little cinnamon, the black gnat, the black and red ants, and in fact all others, are attractive. The water is then covered with myriads of many-colored flies, and there is hardly any artificial but will find its representative among the real life.

These are but a few of the flies that can be purchased in the shops, which yearly invent new varieties, regardless of truth to nature or the recommendations of experience. Many have no names whatever, and in others the workman has given his fancy such play

that they are unrecognizable. In these pages, when the name is given of any fly described in Ronald's "Fly-Fisher's Entomology," it is intended that it shall be dressed after the directions therein contained. A more full description of the various flies, both in use and to be found in our waters, will be given hereafter with some directions for tying them; but a great deal must be left to the practical experience of each fisherman, according to the range of waters he is in the habit of fishing.

Good luck, that synonym for all the virtues, does not depend so much upon the kind of flies as the skill in casting, and a poor fly lightly cast into the right spot will do better execution than the best fly roughly cast into the wrong place. The lure must be put where the fish habit, often before their very noses, or they will not take it; and when they lie, as they generally do in running streams, in the deep holes under the banks, where the bushes are closest and cause the densest shade, it requires some skill to cast properly into the exact spot. Sacrifice everything to lightness in casting; let the line go straight without a kink if you can, drop the fly into the right ripple if possible, but it must drop gently on the surface of the water. An ugly splash of a clear day in pure water, and the prey will dart in every direction, and the angler's hopes scatter with them.

A beginner may practise a certain formula, such as lifting the line with a waive and a smart spring, swinging it backward in a half circle, and when it is directly behind him, casting straight forward; but as soon as he has overcome the rudimentary principles, he should cast in every manner, making the tip of his rod cut full cir-

cles, figure eights, and all other figures, behind him, according to the wind; bearing in mind, however, ever to make his fly drop as gently as a feather. He should use his wrist mainly, and practise with each hand, and should never be otherwise than ashamed of a bungling cast, though he be alone, and none but the fish there to despise him. If the line falls the first time with a heart-rending splash all in a tangle, it is useless to make the next cast properly. The fish have found out the trick, and know too much to risk their necks in any such a noose.

A skillful fisherman can cast almost any length of line, but practically, fifty feet, counting from the reel, is all that can be used to advantage. Some English books say only the leader (gut links) should alight in the water; but this is nonsense, for at least one half the line must fall into the water, unless the fisherman stand on a high bank. With a long line the difficulties of striking and landing the fish are greatly increased; in striking, there is much slack line to be taken up; in landing, it requires some time to get the fish under control, and he is apt to reach the weeds or a stump.

That most excellent fisherman and learned scholar, Dr. Bethune, in his edition of Walton, Part II., page 73, says that candid anglers must confess that nine out of ten trout hook themselves; this may be so in streams teeming with fish, where a dozen start at once, frantically striving to be the first; but in clear, well-fished streams, not one fish in a thousand will hook himself; and on Long Island an angler would grow grey ere he filled his basket if he did not strike, and that quickly. Striking, to my mind, is by far the most important point, and hundreds of fish

have I seen escape for want of quickness. It must be done quickly but steadily, and not with a jerk, as the latter is apt, by the double action of the rod, to bend the tip forward and loosen instead of tightening the line. There are days when fish cannot be struck, although they are rising freely; whether they are playing or over-cautious, I never could determine; whether they are not hungry or the water is too clear, they put man's capacities at defiance. Their appearance must be signalled to the eye, by that reported to the brain, which then directs the nerves to command the muscles to move the wrist; and ere this complicated performance is completed, the fish has blown from his mouth the feathery deception and has darted back to his haunts of safety. A fish will occasionally leap up, seize the fly, discover the cheat, and shaking his head, jump several feet along the surface of the water to rid his mouth of it, and do this so quickly as not to give a quick angler time to strike. How often fish are caught when they rise the second time, as then the angler is more on the alert, whereas on the first rise he was off his guard! How often fish rise when the angler's head is turned away from his line, or when he is busy at something else, and how rarely are they caught! In my experience it is so great a rarity, that it might almost be said they never hook themselves. In the language of youth, the only hooking they do is to hook off.

Dr. Bethune, page 97, says the rod should not exceed one pound in weight. Indeed it should not, and if it does, it exemplifies the old maxim, so far as to have a fool at one end. If we could fish by steam, a rod exceeding a pound and measuring over fourteen feet might answer

well, but in these benighted days, while wrists are made of bone, muscles, cartilages and the like, the lighter the better. A rod, and if perfection is absolutely indispensable, a cedar rod of eleven or twelve feet, weighing nine or ten ounces, will catch trout. Cedar rods can only be obtained in America, and then only on compulsion, but this wood makes the most elastic rods in the world. They spring instantly to every motion of the hand, and never warp. They are delicate; the wood is, like woman, cross-grained, but invaluable if carefully treated. The reel should be a simple click, never a multiplier, but large barrelled, and fastened to the butt with a leather strap. The line, silk covered with a preparation of oil, tapered if possible at each end, and thirty to forty yards long. The basket, positive, a fish-basket; the angler, comparative, a fisherman.

Thus equipped, go forth mildly approving where the writer's opinions coincide with yours, simply incredulous where they do not. Ere you begin, however, you may wish to know the size of the fish you can catch, a matter of no little intricacy, for though we all know the size of the fish we have ourselves caught, there is always some one else that has caught larger. My largest trout, at the time this is written, was taken on the Marshpee River, on Cape Cod, and weighed three pounds and fourteen ounces. But it is said there were inland brook trout exhibited at the New York Club by a member in the year 1857, the two largest of which weighed cleaned six pounds and a half each. "I have my doubts." These fish should have weighed, when first taken, nearly eight pounds, double the size of any trout,

other than sea trout, I have ever seen or before that heard of. In my opinion, they were lake trout, caught, perhaps, from a small pond, and bright colored. It was claimed they were taken with the fly, which lake trout will not ordinarily touch; but, unfortunately, it was also said, that two weighing about five pounds each were caught and landed on one cast, and that this was done twice. Now confidence in our neighbors' truth is the framework of society, but there is a limit to human credulity, and catching two five pound trout at one cast, is at the very verge of that limit. No one, except by the most incredible good fortune, could kill two such fish on any ordinary fly-tackle, with any ordinary fly-rod. The hooks would almost certainly tear out, and no strain could possibly be kept on the lower fish, which, by slacking up his line and then darting away, would probably go free. But great luck alone could enable a person to land two such fish; the lower one would never drown, being at perfect liberty—by the by, trout never die in the water, they always save enough life for one final rush—and when the upper fish was landed or gaffed, the lower would go off in a jiffy. When a person claims to do this twice in a day, he must be pronounced a lucky man indeed.

We caught our big trout in the Marshpee, and we will tell you how we did it, though the words make us blush as we write them. We were young then, and it is to be hoped innocent; and having gone to Sandwich, on Cape Cod, in search of untried fields, discovered a jolly, corpulent landlord, named Teasedale, who, with his friend, Johnny Trout, so named jocosely, were the

fishermen of the neighborhood. That was before the stream was preserved for the benefit of the "Poor Indian," and poorer fishermen mulcted, as at present, in five dollars a day for the privilege of fishing. We drove to the stream, almost six miles, Teasedale enlivening the early June morning with snatches of hunting songs, and when there plunged recklessly in. Oh! but the water was cold—a dozen large springs poured in their freezing contents—and the blood fairly crept back to our hearts. The stream ran through a narrow defile, overhung with the thickly tangled vine and creepers, rendering a cast of the line impossible, and had worked its way far under the steep banks, making dark watery caverns, where the great fish could lie in wait for their prey. We removed the upper joint of our fly-rod, which was heavy and strong, and leaving the line through the last ring of the second joint, we put on a bait next to the fly in beauty and effect, the minnow. The water was freezing cold—the closely entwined boughs and leaves shut out the heavens above, and we were alone in the shadowy darkness with the tenants of the deep. The herring frequented the brook, and pursued by the large trout, darted in shoals between our feet. It is always a good sign when the herring are running, and we had excellent luck.

There are several ways of putting on a minnow, and if a person from ignorance or necessity must poach, let him poach well. There is the gorge-hook loaded with lead, the snell passed by the baiting needle at the mouth of the bait and out at the tail, bringing the hooks which are double at the mouth. It is highly recommended by some English books and their American imitators, but

in my experience is more useful, unbaited, for catching snapping mackerel, young blue-fish, than for any other purpose. There are the gangs of hooks, consisting of two or more small hooks back to back, one of which is inserted in the side or back of the bait, with another small one further up on the line, which is inserted on the lip or nose. It answers well for some kinds of fishing, and for large bait, but does not work well with small fish. The bait is not bent sufficiently, and does not spin readily.

Then there is the old-fashioned large single hook, thrust through the mouth, down the fleshy part of the back and out at the side, or out at the gills and back through the mouth into the side. The objection is that bait is apt to work down on the bend of the hook, or the trout is apt to take off the tail of the bait without being hooked.

The other, and I think the best plan of baiting with dead bait, is the same as the last, with the addition of a small hook to thrust through the nose, that tends to retain the fish in its place, and allow the hook to be carried down further toward the tail, and still make the bait spin well. Minnow is never properly baited, unless it spins freely with every motion of the rod, and it must ever be kept moving. Of course the line must be armed with the swivel-trace, and in baiting with dead minnow a Limerick hook should be used, when using worms or grasshoppers a hook of finer wire is better.

The dead minnow is preferable for rapid water. In ponds the minnow should be alive, in which case the hook is to be inserted in front of the dorsal fin, and the

point may be left under the skin, or exposed, as the poacher pleases; I prefer it covered. It should not penetrate the flesh.

In the Marshpee I was using a single hook, keeping the bait well ahead of me, and creeping cautiously in the freezing water, watching the tiny float as it danced its merry course along, now borne swiftly over the rippling current, anon caught in an eddy and returning on its track, and then again resting motionless in some dark and quiet pool. It was scarcely visible beneath the dense shadows, and once in a while it would disappear from my straining sight; then followed a sharp blow with my rod, a fierce tug, a short fight between fear, despair and cunning on the one side, and strength, energy and judgment on the other. The prey once hooked, and skill there was not; it was a mere contention of two brute forces, in which the weaker went to the basket. An exhibition of skill or tenderness would have resulted in an entanglement round the nearest root, and the loss of fish, leader and hook. Still, there was excitement; the situation was romantic, the narrow gorge, the deep and rapid stream, the closely matted trees and vines, the ever-changing surface of the current, which adds beauty to the tamest brook, all combined to lend enchantment to the scene. The fish were large and vigorous, fresh run from the sea, where they had, the Winter long, been a terror to the small fry, and early death to juicy and unsuspecting shell-fish. They fought fiercely for life and liberty, their homes and their household gods, and, alas! too often successfully. The risk of their escape added to the interest of the occasion, and

the number of herring darting past gave continual promise of the presence of their arch enemy, the trout.

I had half-filled my basket, and had met with wonderful escapes and terrible heart-rending losses, mingled with exhilarating successes. I had made about half the distance, as well as we judged, and felt proud and happy as no king upon his throne ever did or will. My rod, though a fly-rod, was whipped every few inches with silk, and thus strengthened had stood the unequal conflict admirably. Still hoping for better things—who will not hope for the impossible?—I strode on. Below me the current made a sudden turn at a bend in the stream, and eddied swiftly under the overhanging bank. The brook almost disappeared in what was evidently a vast cavern deep in the bowels of that bank. In such watery palaces, amid the worn rocks, the tangled roots, the undulating moss and weeds, fierce-eyed, monstrous trout delight to dwell. In such fortresses they await unwary travellers, and dark deeds are done in the congenial darkness—outrage, riots and murder stalk boldly about. The migratory herring, harmless and unsuspecting, peers in and starts affrighted back, then peers again, at last ventures forward, and then, compelled by instinct to ascend, tries to dart hastily by; there is a sudden rush, a frantic struggle, a piteous look entreating mercy of pitiless hearts; for an instant the water is dyed with blood and then flows on, washing all trace of the deed away.

I approach the den carefully, the feather-like float dancing merrily far ahead over the rippling tide, and as the line is paid out, swaying from side to side, close in

front of the roots that fringe the bank, still not a sign ; a step forward—the water carries it under the bank out of sight. I stand still, expectant ; nothing yet ; I creep cautiously to the very bank, and thrust my rod in the water, aye, under the bank its full length. What's that ! Ah ! what a tug ! I have him, the monster, the Giant Despair of the wayfaring herring. How he pulls ! I must have him out of his retreat ; it is a great risk but my only chance. I strain my rod, my line, almost my arms, to the utmost ; he comes, disdainful of surreptitious advantages, relying on his great strength ; he has not taken protection of weed or stump. Now, my boy, do your utmost ; yes, leap from the water, dart down with the current ; I must give to you a little ; no line can stand that strain ; but you will never reach your lair again. Turn about, head up stream, that is what I want ; there is a sandy bank above us, can I but reach it and land you there. Ah ! you perceive the danger or have changed your mind ; how you fly down stream with the slackened line hissing through the water behind you. Well, go, you will soon turn again. Already, beautiful, you have passed the bank ; now, rod, be true ; line, do your duty. The pliant ash bends, the upper joint has passed below the but in a wide hoop. He comes, his head is up ; if I can but keep it out of water ! he dashes the foaming waves with his strong tail ; one more effort ; bend rod, but do not break ; he is out of water ; I have him. He is dancing on the yellow sand his last dance in mortal form ; his changing hues glancing in the mild light, his fierce mouth gasping, his bright sides befouled with sand and dust, his glittering scales

torn off by the sharp stones. His efforts grow fainter, the flashing eye dims, a few convulsive throes and he is quiet; the grim hand of death has pressed upon him.

He is indeed the prince of monsters, the paragon of giants; so thick, so deep, with so small a head for so large a body; such brilliant hues: the fins so red, the blue and carmine spots so numerous and delicate. I wash him off and stand gazing at him in my hand regardless of further sport. I have captured the king, and care not to follow his subalterns. I lay him gently in my basket; he will not lie at full length. I cover him with moss, filling the little room left, and forcing my way through the overhanging bushes, and, reaching the broad light of day, proudly await the arrival of my companion. Then the moss is carefully removed, and the beauties of my darling are unveiled, and flash and gleam in the sunlight.

There are several ways of landing a trout, but not all equally sportsmanlike. Large trout may be gaffed, small ones landed in a net, and where neither of these means is at hand, they must be dragged out of water, or flirted up among the bushes, according to the taste of the angler and the strength of his tackle.

A tyro was once fishing on the same boat with me, using bait, when he struck his first trout. One can imagine how entirely misspent had been his previous existence, when it is said he had never taken a trout, no, nor any other fish before. It was not a large fish; such luck rarely falls to the share of the beginner, and in spite of what elderly gentlemen may say to the contrary, an ignorant countryman, with his sapling rod

and coarse tackle, never takes the largest fish nor the greatest in quantity. Were it otherwise, sportsmen had better turn louts, and tackle makers take to cutting straight saplings in the woods. My companion, nevertheless, was not a little surprised at the vigorous rushes the trout made to escape, but his line being strong and rod stiff, he steadily reeled him in. Great was the excitement; his whole mind was devoted to shortening the line, regardless of what was to be done next. We had a darkey named Joe with us to row the boat and land the fish, and our luck having been bad during the morning, he was delighted at this turn of affairs, and ready, net in hand, to do his duty. The fish was being reeled up, till but a few feet of the line remained below the top, when, with a shout of "land, Joe, land him," my companion suddenly lifted up his rod, carrying the trout far above our heads. There it dangled, swaying to and fro, bouncing and jumping, while the agonized fisherman besought the darkey to land him, and the latter, reaching up as far as he could with the net, his eyes starting out of his head with wonder at this novel mode of proceeding, came far short of his object. Never was seen such a sight; the hopeless despair of my friend, the eagerness of the darkey, who fairly strove to climb the rod as the fish danced about far out of reach. What was to done? The line would not render, the rod was so long we could not reach the tip in the boat; and the only horrible alternative appeared to be my friend's losing his first fish. The latter, however, by this remarkable course of treatment, had grown peaceable, and when he was dropped back into the water, made but

feeble efforts, while my companion, as quietly as he could, worked out his line till he could land him like a Christian. Great were the rejoicings when the prize earned with so much anxiety was secured. That is the way not to land a trout.

One afternoon of a very boisterous day, I struck a large fish at the deep hole in the centre of Phillipse's Pond, on Long Island. He came out fiercely, and taking my fly as he went down, darted at once for the bottom, which is absolutely covered with long, thick weeds. The moment he found he was struck, he took refuge among them, and tangled himself up so effectually that I could not feel him, and supposed he had escaped. By carefully exerting sufficient force, however, the weeds were loosened from the bottom, and the electric thrill of his renewed motion was again perceptible. He was allowed to draw the line through the weeds and play below them, as by so doing they would give a little, while if confined in them he would have a leverage against them, and could, with one vigorous twist, tear out the hook. When he was somewhat exhausted, the question as to the better mode of landing him arose. The wind was blowing so hard as to raise quite a sea, which washed the weeds before it in spite of any strain that could be exerted by the rod, and drifted the boat as well, rendering the latter almost unmanageable, while the fish was still so vigorous as to threaten at every moment to escape. I besought the boatman, who was an old hand and thoroughly up to his business, to drop the boat down to the weeds and let me try and land my fish with one hand while holding the rod with the other. He knew the dangers of such a

course, and insisted upon rowing slowly and carefully for shore at a shallow place sheltered from the wind, although I greatly feared the hook would tear out or the rod snap under the strain of towing both weeds and fish; once near shore, he deliberately forced an oar into the mud and made the boat fast to it, and then taking up the net, watched for a favorable chance. He waited for some time, carefully putting the weeds aside, until a gleaming line of silver glanced for a moment beneath the water, when darting the net down, he as suddenly brought it up, revealing within its folds the glorious colors of a splendid trout. That was the way to land a trout under difficulties, although I still think I could have done it successfully by myself.

Generally, the utmost delicacy should be shown in killing a fish, but there are times when force must be exerted. If the fish is making for a stump, or even weeds, he must be stopped at any reasonable risk of the rod's breaking or the fly's tearing out. A stump is the most dangerous; one turn round that, and he is off, leaving your flies fast probably in a most inconvenient place and many feet below the surface of the water. But remember the oft-repeated maxim of a friend of the writer's, who has been with him many a joyous fishing day, that "One trout hooked is worth a dozen not hooked." Small trout are more apt to escape than large ones, because the skin round the mouth of the latter is tougher. With either, however, there is risk enough, the hook is small, and often takes but a slight hold; the gut is delicate, and frequently half worn through by continual casting.

Fish are, in a majority of instances, hooked in the corner of the upper jaw, where there is but a thin skin to hold them ; by long-continued struggle, the hole wears larger, and finally, to the agony of the fisherman, the hook slips out.

There are occasions when force must be exerted, and then good tackle and a well-made rod will repay the cost. At dusk one night I cautiously approached the edge of a newly-made pond that was as full of stumps as of fish, both being about the extreme limit, and casting into the clear water, struck a fine fish of three-quarters of a pound. Not one minute's grace did he receive, but I lugged and he fought, and after a general turmoil I succeeded in bringing him to land, in spite of weeds and stumps and twigs, which he did his best to reach. The same was done with seven fish after a loss of only three flies, and with a rod that weighed but eight ounces.

A rod is not so apt to break from a fair strain as from a short twist ; of course, if you strike a large fish as you raise to cast, or catch in the bushes behind you when your line is extended, any rod may break. This, however, rarely happens, and you are as likely to break the tip by trying to pull the line through the rings with your hand, or by lifting a small trout out of water and swinging it in past you, as in any other way. In drawing a fish to shore when you have no landing net, step back and bring the strain evenly on your rod, and it will rarely give way. If you find the fish takes down the current and you are unable to hold him, follow him if you can, and if not, point your rod toward him and bring the strain on the line. The hook may tear out, or the gut may break,

or even the line may be lost, but you will save your rod, while otherwise you would probably lose both.

In landing a fish, wait till he is pretty well exhausted, bring his mouth above water and keep it there till he is drawn into the net, and warn your assistant to remove the net at once if he gets his head down. By diving after him with the net, the assistant would certainly not catch the fish and might tangle one of your other flies. The fish should be led into the net, and the latter kept as still as possible; he knows as well as you do what it is for, and if his attention is drawn to it, will dart off as madly as ever.

There are occasions and situations where a fly cannot be used, and a minnow—called down East, from the Indian name *mummychog*, a mummy—cannot be obtained. In such cases it becomes necessary to fall back upon first principles. A grasshopper, twitched along the surface of the water in a way called skittering, is an effective bait, although an imitation grasshopper, as well as an imitation minnow, does not answer and will not deceive trout. Salmon and trout roe are used, and it is said, contrary to the writer's experience, with great success. Gentles, which are grubs hatched in meat that has been fly-blown, are a favorite bait in Europe; but, in spite of their beautiful name, are horrible objects and not in vogue with us. Caddies, or the larvæ of the *Phryganidæ* in their cases, are also in use there, but not here. We must, therefore, have recourse to the angle-worm.

The finest worms are to be found in tanyards; they should be placed on the top of damp moss, left for a

night or two to work themselves clean, and then placed in other moss sprinkled with milk. They become strong, light colored and lively, and should be threaded on a fine hook by passing the point in at the head of the worm and out half-way down the side; then in, half up the side of another, and forced nearly to the head. Worms, if cast as in fly-fishing, are very attractive, and will frequently kill an immense number of fish. There is much skill in casting so as not to tear off the bait, and yet to cover an extent of water

In rapid streams, whether with bait or fly, always fish down stream; there is less noise, the line is kept taught, the fly looks more natural, and unless the wind is strong against you, it will be much easier and pleasanter fishing. Move the bait continually; keep it in motion under all circumstances; this is the great secret of bait-fishing.

I have also heard of shrimp preserved in whisky being used, and think they might answer for fish that have just run from the salt water; but as frequent experiment with the live shrimp has proved their inferiority to minnow, I have little faith in them.

The trout is admitted to be the most beautiful of all our fish; not so large nor powerful as the salmon, he is much more numerous, abounding in all the brooks and rivulets of our northern States. He lives at our very doors; in the stream that meanders across yon meadow, where the haymakers are now busy with their scythes, we have taken him in our early days; down yonder in that wood, there is a brook filled with bright, lively little fellows; and away over there we know of pools where there are

splendid ones. Who has not said or thought such words as he stood in the bright summer's day under the grateful shade of the piazza running round the old country house where he played, a boy?

He does not make the nerves thrill and tingle like the salmon, he does not leap so madly into the air nor make such fierce, resolute rushes, he has not the silver sides nor the great strength; but he is beautiful as the sunset sky, brave as bravery itself, and is our own home darling. How he flashes upon the sight as he grasps the spurious insect, and turns down with a quick little slap of the tail! How he darts hither and thither when he finds he is hooked! How persistently he struggles till enveloped in the net! And then with what heart-rending sighs he breathes away his life!

There is no fish like him. Lay your prize on a bed of moss, which is his natural resting-place; look at the exquisite hues like shotten silk, the dark spots, the carmine specks, the single first white ray in his fins, and the rich red of the second extending to the lower edge of the abdomen; the greenish-mottled back, the silver below—what a picture for the painter, if his brush could catch the evanescent tints. How proudly and fondly we gaze on our beautiful prize, not with the mere rude, brutal pride in securing so much booty, such a sum in money value, or a delightful dish for the table, but with an affectation that is hard to explain to those who are not anglers. The sportsman is more fond of the game he pursues and more anxious to preserve it from destruction than the most pretentious humanitarian of animal worshippers. The angler is proverbially the most gentle of men, he is fond of nature, peaceable, contemplative, patient: he

admires the grandeur of the woods, the rugged strength of the rocks, and the changing splendor of the sky. He listens with pleasure to the murmur of the brook, the songs of the birds, and the rustle of the wind.

The man who kills to kill, who is not satisfied with reasonable sport, who slays unfairly or out of season, who adds one wanton pang, that man receives the contempt of all good sportsmen and deserves the felon's doom. Of such there are but few.

We seek this, our favorite fish, in early Spring, when the ice has just melted, and the cold winds remind one forcibly of bleak December, and when we find him in the salt water streams, especially of Long Island and Cape Cod; but we love most to follow him in the early Summer, along the merry streams of old Orange, or the mountain brooks of Sullivan County. Where the air is full of gladness, and the trees are heavy with foliage—where the birds are singing upon every bough, and the grass is redolent of violets and early flowers. There we wade the cold brooks, the leafy branches bowing us a welcome as we pass—the water rippling over the hidden rocks, and telling us, in its wayward way, of the fine fish it carries in its bosom. With creel upon our shoulder and rod in hand, we reck not of the hours, and only when the sinking sun warns of the approaching darkness, do we seek, with sharpened appetite, the hospitable country inn, and the comfortable supper that our prey will furnish forth.

The brooks of Long Island, especially on the southern shore, abound with trout. But they are few in comparison with the hordes that once swarmed in the

streams of Sullivan and Orange counties, and in fact all the lower tier of counties in this State, before the Erie Railroad was built, and opened the land to the crowd of market men. I am proud to say I have travelled that country when it took the stage coach twelve hours to go twenty-four miles, and when, if we were in a hurry, we walked, and sent our baggage by the coach. Now you are jerked along high above our favorite meadows, directly through our wildest hills, and often under our best streams, at the rate of forty miles an hour, and yet people call that an improvement. As well might you lug a man out of bed at night, drag him a dozen times round his room, and fling him back into bed, and say he was improved by the operation. No one wants to be lugged out of bed, precisely as no one wanted to travel beyond Sullivan County; the best shooting and fishing in the world was to be found there.

When the railroad was first opened, the country was literally overrun, and Bashe's Kill, Pine Kill, the Sandberg, the Mon Gaup and Callicoon, and even Beaver Kill, which we thought were inexhaustible, were fished out. For many years trout had almost ceased from out of the waters, but the horrible public, having their attention drawn to the Adirondacks, gave it a little rest, and now the fishing is good.

If you go there, stop at George Durrance's, in Wurtsborough, and if he boasts of fishing, as he will,* ask him whether he remembers going to the Sandberg one day, many years ago, to show a Yorker how to catch trout.

It was a bright sunshiny day, and as we drove up to the edge of the bank, above a clear, rapid, sparkling stream, I

* If he is alive at this writing.

saw a large trout leap heavily out of water, where the current swept with a swirl past a high rock. As I rigged up my flies, George borrowed my knife to cut a pole, as he did not have much faith in "them things," and while he was gone, I crept cautiously up behind the rock, and cast over the further projecting point. I could not see my flies alight, but heard a splash, and striking felt I had a splendid fish. He fought bravely, but by keeping him in the upper part of the pool, the lower end by the rock, was not disturbed. After some trouble, I landed him, having no net. Then approaching the rock with the same caution, the performance was repeated, only this time my rod was broken in endeavoring to land the fish, and it was necessary to find George and obtain my knife.

I discovered him under the bushes on the bank, in a miserable state—it was oppressively hot—his rod was a long sapling, and naturally heavy—the sky and water were clear, and the fish would not touch the worm, which we could see from where he sat. He had only taken two miserable little fish. He did no better all day, and while I rose and killed fish after fish, he did not take another one. When afternoon came, and he impatiently urged me away, my basket was so full it broke down, and he had his two fish. On reaching his house, the boys spread our respective takes out on a board, and to George's deep chagrin exhibited them to the entire village. He has not taught a "Yorker" how to catch trout since.

So much for your countryman, with his bed-cord for line and stick for pole, and yet George was admitted to

be the best fisherman in that neighborhood. A person residing near a stream, and having fished it from infancy, and acquainted with its every pool, has an immense advantage over a stranger; but there was only one countryman ever beat me trout-fishing, and he, after taking me to the stream, slipped off and waded it down ahead of me.

All the streams that, taking their rise in or near this State, flow into the Delaware or Susquehanna, are filled with trout; the Tobyhanna, the Bushkill, Broadhead's Creek and a thousand others, that the Erie and Lackawanna railroads now make easy of access. While Hamilton County, Essex, the region of the Adirondacks, Clinton County with its Chateaugay and Chazy Lakes, and the Saranac River, and Franklin County with its innumerable ponds, offer all the sport that the heart of man can desire. All the streams of New England, especially in the neighborhood of the White Mountains, are filled with small trout; while the State of Maine, in Moosehead Lake, the Kennebec, and its other fine rivers and lakes, affords the finest brook trout-fishing in the world.

The angler may, therefore, seek his darling close to his own summer-house, or may drop in at any of the many well kept taverns on the south side of Long Island, where he will find every comfort and most of the luxuries of the day, will meet other enthusiastic fishermen, who will relate varied and interesting experiences, and exchange views and fancies with him, and will prove themselves, if real fishermen, the most obliging and unselfish gentlemen in the world; or he may seek the lonely hotel at Lake Pleasant or Moose-

head Lake, where he will still find comfort in a rougher way, and wonderful good sport; or he may boldly strike out into the trackless woods, commit himself to his birch canoe and trusty guide, and then, if he be made of the right stuff, I promise him such happiness as he will never forget—merry innocent days and dreamless nights, health in every limb, and contentment in his mind.*

There is no fish more difficult to catch, nor that gives the true angler more genuine sport than the trout. His capture requires the nicest tackle, the greatest skill, the most complete self-command, the highest qualities of mind and body. The arm must be strong that wields the rod; the eye true that sees the rise; the wrist quick that strikes at the instant; the judgment good, that selects the best spot, the most suitable fly, and knows just how to kill the fish. A fine temper is required to bear up against the loss of a noble fish, and patient perseverance to conquer ill luck.

Hence it is that the fisherman is so proud of his basket of a dozen half-pound trout, he feels that any one more awkward or less resolute could not have done so well. He feels conscious that he does not owe his success to mere luck, but has deserved the glory. He feels that he has elevated himself by the very effort. Do not suppose I mean that there is no skill in other fishing; there is in all, even in catching a minnow for bait, but most of all in trout-fishing.

* Since that was written, many of these waters have been depleted, and Long Island has been so thoroughly preserved that there is hardly a free pond or stream from one end to the other of it.

CHAPTER III.

SEA TROUT.

Salmo Trutta Marina—*Salmon Trout*—*White Trout*.

This fish corresponds precisely with the description given by Dr. De Kay of the Speckled Trout, *Salmo Fontinalis*, except in the following particulars:

I can find no teeth in the vomer or central part of the roof of the mouth any more than I can find them on the common brook trout, and I have examined great numbers of the latter for the purpose. The pectorals are nearly a transparent white, slightly tinged with red at the origin of the rays, except that the second ray is darkish. The first ray of the ventrals is yellow, the second dark, the third and the others orange fading into white; the origin of the ventrals is directly under that of the first dorsal. The first ray of the anal fin is orange, the second and others dark green, growing lighter toward the tail, the origin of the second and third rays being yellowish. The scales are very small, imbedded in the skin, and there are neither scales nor defined spots on the gill-covers. The fin-rays are as follows:

Br. 12; D. 13; P. 13; V. 8; A. 10; C. 19 $\frac{1}{2}$.

The branchial rays seem to differ sometimes, the same fish having eleven on one side and twelve on the other, and the highest one is a half ray or small plate. The

anal, properly speaking, has eleven rays, but the first is so delicate and so lost in the fleshy part of the fin, that it is hardly distinguishable.

The coloring of these fish differs greatly from that of the common trout, but it is universally conceded that color is no test or distinction of species. When fresh run from the sea, and when still inhabiting the salt water, they are gloriously brilliant; their backs a liquid bluish green, the under part flashing like molten silver. The spots and scarlet specks on their sparkling sides are of a purer tone, and the lower fins more slender and delicate.

They are found in the bays of Prince Edward's Island, in the harbors of New Brunswick, and in all the gulf and river of St. Lawrence and its lower tributaries. In Frank Forrester's "Fish and Fishing," a letter from Mr. Perley, the British Commissioner of Fisheries, is quoted, page 123, in which he says these fish do not ascend into purely fresh water. In this I am reluctantly, out of respect to his great experience as a fisherman and high standing in scientific attainments, compelled to differ from him. I have unquestionably taken these fish far above tide water, and have the best authority for saying that usually, if not invariably, the larger trout at least ascend to the head-waters of the mountain streams to spawn. I venture to say that no large sea trout are taken in the tide water after the last, and rarely after the first of August. It is probable that he has been misled by the fact that there are trout in the same streams that never descend to the sea, and there is a marked difference in color between them and their

brethren, although I believe they are the same fish. For the correctness of these views, reference can be made to the experience of many authorities that would be satisfactory to one that I esteem and respect as much as I do my excellent friend and brother of the angle, Mr. Perley. While mentioning his name, it will not be amiss to tender him, in the name of the fishermen of the United States, our thanks and grateful acknowledgments for the invariable kindness, courtesy and good humor with which he has answered the numerous questions entailed upon him by his mention in Frank Forrester's "Fish and Fishing," and the valuable aid and advice he has furnished the wanderers from the States in their search for piscatorial happiness. Combining as he does the heartiness of an Englishman with the sociability of our own country, we are proud to claim him, while he remains in our vicinity, as half an American. But let me, at the same time, suggest to my countrymen, that there is a limit even to the best of tempers, and that, although each one may only put a few questions and take up a little valuable time, the total combined may be annoying, inconvenient, and even excessively burdensome.*

In addition to the positive fact of taking sea trout above tide water, it is to be remarked as a habit of all trout to ascend in summer to the cool sources of the springy brooks, and our common trout will invariably be found, after the warm weather is at its height, either in the rivulets that feed the ponds where they dwell in winter, or at the head-waters of the ponds. The sun's rays are so powerful that they affect any sheet of open

* Since then passed away. Peace and happiness be with him.

water, especially the harbors and bays of the ocean, and the fish will not live there, but withdraw to cooler regions. A remarkable case of this kind fell under the writer's observation at Masapequa Pond, which is universally admitted to be the best preserve on Long Island. It is rather small, and quite shallow except in the channel, and being entirely unsheltered, is liable to become heated in hot weather. The spring had been remarkably mild, and in the middle of May, after a number of days that reminded one of June, I visited Masapequa, and, although the weather was favorable and a lively ripple darkened the water, only two trout were killed in the entire morning. I was much discouraged and surprised, until happening to get my flies caught, I put my hand into the water and found it milk-warm. The explanation was simple, and I at once told the proprietor, who had been more astounded than myself, that the fish had run out of the pond into the brook; and there, sure enough, we shortly discovered them lying in the deep pools in shoals.

If they cannot retire to cool, fresh, aerated water, they will perish, as happened one dry, warm season in a pond at Oyster Bay, which, although well filled with trout, had no extensive head-waters. The fish crowded round the flume, hardly disturbed by being touched with a stick, remaining motionless, and evidently suffering. They died and were picked up by scores.

If sea trout do not ascend the fresh streams, where do they spawn? From the habits of all the salmon tribe, we know they must have a current of pure and cool water to vivify the eggs, and they certainly cannot find

this along the shores and bays. Their eggs must be deposited on a gravelly bed and not on sand, and as the bottom of the salt water, which is purely sand, even if appropriate spawning ground, is peopled with all sorts, shapes and sizes of creeping, crawling and burrowing things, from sand-worms to sea-eggs, the spawn would be utterly destroyed long before it could come to maturity. If, in spite of all these difficulties, the eggs should hatch, the young fry being entirely helpless for thirty days, and little able to take care of themselves afterward, would be annihilated by their elder brethren or the first sea fish that came along. Young trout, in their appropriate localities, hide carefully in little spring rills and close along shore for months after they are hatched, and not till well grown and active do they trust themselves in the deeper places among the larger fish. Nature has taught them that the latter have an excessive fondness for them.

Whether sea trout spawn earlier than brook trout, I do not know, but very possibly they may, as in cooler countries fish usually spawn earlier than in warmer ones. However, in August the roe is not developed to any great extent; no more so, apparently, than with us, and, although the Canadian Winter sets in earlier than ours, trout do not fear the cold. The regions they inhabit being extremely difficult of access in the freezing season, this question may remain some time unsolved.

Whether sea trout should be ranked as a distinct species, or whether there are any different species of trout in America, has been a serious question. It is a great misfortune that every naturalist, in his eager

endeavor to discover new species and originate new names, has caught at the slightest distinctions in appearance, which are often only due to food or water, and has immediately dubbed the fish a knight and endowed him with a new name—frequently some horrible Latin perversion of his own. Real distinctions are those permanent ones that no change of food and water can affect, nor the chance influence of a few shell-fish or a muddy bottom. There are distinctions between these trout and brook trout, of color, comparative size of different parts of the body, formation of the head and fins; but not more so than one often meets with in fishing any of the streams of Long Island that communicate with the sea, or even in the different streams of the wild woods. The sea trout of Canada certainly do far excel the ordinary trout in size, being taken, with the fly, weighing nine pounds, and the ordinary average being from three to four; but otherwise they seem to have no permanent peculiarity that should distinguish them from the common brook trout. All other distinctions fade after the trout have been for some time in fresh water, and a late run of sea trout differs far more from those which have ascended the streams a month earlier than the latter from the brook trout. Indeed, some sea trout have become domesticated in the fresh water, and never returning to the sea, have settled down, although often of great size, into the ordinary trout.

In Stump Pond, on Long Island, and the adjacent waters, are four different varieties of trout: the old-fashioned Stump Pond Trout, * with a black mouth, a long, thin body, a big head, and a wolfish, hungry

* The old Stump Pond trout has of late years wholly disappeared.

look; the Salt Water Trout, with a small, sleepy head, a deep body, and a rich coloring, small fins and red flesh; the Brook Trout, long, narrow, brightly marked, gracefully shaped and lively; and a trout which has appeared in a new pond, scarcely yet completed, with a dark, strong coloring, very black on the back, a thick, stout body, and a well proportioned head. Any one can distinguish these fish at a glance, but must they each have a different name, and a Latin one at that?

The fresh run sea trout of the North have beautiful silver sides, almost as bright as a salmon's, and in this particular, at least, differ from the salt water loving trout of Long Island and Cape Cod. Their heads are small, delicate, and exquisitely shaped, and their lower fins are small and almost transparent. The heads of the males are larger, and the lower jaw more hooked than those of the female, and these differences increase as the spawning season advances. The head of the female bears a comparison to that of a modest, refined lady, while that of the male resembles the big head and ugly jaw of the struggling, quarrelling, but protecting man. At times their flesh is a bright red, often a dull yellow and rarely whitish. The shape of their bodies is graceful and broad across the back, to a greater degree in both particulars than the sea run trout of Long Island and Massachusetts. But as they ascend the rivers, and after they have been some time in their new abode, these peculiarities diminish, the color of their backs turns from a beautiful green to a dull black, the splendor of their silvery sides fades, and the heavy spots and roseate tinge appear; their translucent fins grow opaque and strong

from greater use in the swift current; their shape even seems to alter, and they are altogether unlovely by comparison with their former selves. Are they, therefore, "like Cerberus, three gentlemen at once," and entitled to three distinct appellations, or are they simply our dearly loved old friends, the *Speckled Trout*?

The change in appearance of these fish cannot be explained by the suggestion that the ordinary brook trout ascend the rivers and mingle with those of the sea, because the latter are to be caught in every stage, from the brilliancy of the fresh river fish to the dull colors of the oldest inhabitant. And it will be noticed that at the heads of the rivers a bright-colored fish is rarely met with, although they must be, with few exceptions, all sea trout.

The best trout rivers of Canada are troublesome to reach, difficult to ascend, and seldom attempted by any but the salmon fisher. To the latter, the trout, attractive as he seems to us, is a trial and a nuisance. Abundant and voracious, he often rushes in advance of the lordly salmon, seizes the fly, and then discovering his mistake, by his struggles disturbs the pool, ruffles the fisherman's temper, and frightens the larger game from its equanimity. He is therefore little noticed by the frequenters of the headwaters, except to be denounced, and his delicate peculiarities seldom considered and less esteemed. He is principally sought in the tide water along the shores, or from boats in the open bays, but rarely followed to his summer home. The statements, therefore, of Canadian fishermen with regard to him must be cautiously received and carefully weighed; their experience may not have been sufficiently extended.

Whatever be his name, he is a beauty, the fairest of the children of the sea. There are others of more variegated colors, of gaudier hues, of more slender shape, but the trout is lord of all. He is the pet of the true fisherman, whether taken by the name of *Salmo trutta* in the bays of Canada, weighing over ten pounds, or as *Salmo fontinalis*, in the mountain streams of Vermont, reaching not one quarter as many ounces. In Canada, sportsmen—and none others seem to fish—take the sea trout solely with the fly. In June, and earlier, they are found in the tide waters, and there prefer gaudy flies. The scarlet ibis, or curry-curry of South America, dressed as it is ordinarily done, or diversified by a little gold or silver tinsel wound round the body, or indeed the entire hook wound with tinsel alone, is by many preferred to all other flies; but the red hackle, the golden pheasant, the professor, the grey drake, and in fact any gay fly, will meet with approval. A much admired fly is made of a red body and yellow wings; but the more sober colors must not be forgotten nor neglected, they are often more successful than their gaudy relations. As the season advances, and the fish ascend the clear, cool rivers, especially if the water be low and the weather dry, the sober flies are preferable. Then the cow-dung, the alder-fly, the turkey-brown, the winged black hackle, and in fact all the ordinary flies, are in demand; a fly invented by myself, of a blackbird's wing and a claret body and legs, and called the early fly, has often proved itself uncommonly killing; and indeed all the flies usually employed in other waters are appropriate for the sea trout in Canada.

Neither does the size of hook differ from that ordinarily in use; it should average about a number nine, with a few somewhat larger for rough water. It is rarely desirable, on account of the enormous size of the fish, to use more than one fly at a time, and generally the trout will soon remove the difficulty by reducing them to that number; but at times, when fish are shy, they seem to be attracted by seeing several. In order to kill the largest possible quantity, without any regard to humanity or sportsmanship, a heavy fly-rod is desirable, as much time is lost in landing them with a delicate rod.

For many hundred miles below Quebec, the majestic St. Lawrence rolls its transparent waters in a steady surge toward the ocean. Forward and backward heaves the mighty tide, piling up the waters eighteen and twenty feet; but the steady current keeps on its course toward the gulf. Into this wonderful stream, that can only be likened to an arm of the sea, at every few miles debouches from the granite hills a river, more or less extensive and more or less rocky and turbulent. These rivers rise on the mountain tops, cold and clear, and thunder down over falls and rapids, through chasms and gorges split in the eternal rock, till they leap, tumble or crawl into that outlet of a thousand lakes, the highway of the Canadas.

These streams the salmon and trout ascend, there to disport themselves, there to make love, prepare their nests, and perpetuate their species. The water is cool, running from the frigid regions of the north or supplied by icy springs, and the bottom offers every variety of

spawning beds. There is the stony pool for the salmon, the pebbly one for the trout, and never do the two spawn, and rarely even live, in the same. The pool where the salmon lie is deep and rapid, with a bottom composed of dark limestones averaging about the size of a bantam's egg. While the trout hide in a sluggish pool, and often one worn away by the water and hollowed from a clay bank. It is a tradition, but one by no means well substantiated, that trout never eat young salmon, nor salmon young trout. As trout are more fond of their own species than almost any other delicacy, it is not probable they would be fastidious about swallowing a nice, juicy little salmon.

The country through which these streams run is very peculiar: rough hills of granite rise almost perpendicularly from the edge of the water, many hundred and sometimes many thousand feet. Their sides are bare and bleak, and if adorned at all with verdure, it is with a stunted pine and spruce, that only half hides the white rock beneath. The streams wind in tortuous course among the crags, and slowly gain a high elevation. These bare, unprofitable hills extend back from the north shore of the St. Lawrence as far as the foot of man has penetrated, and only at long intervals by the shore of some of the larger rivers, where forty centuries of storms have worn away and washed the detritus from the mountain into some little bay, have half civilized beings been enabled to build rough cabins and glean a scanty subsistence. Thus are these waters, the home and nursery of the trout and salmon, protected forever by nature against the pervading destructiveness of man. Judicious

laws have been passed and will be enforced by the Canadian government, and the American fisherman may find in neighboring waters what he will never again see in his own, these noble fish dwelling in abundance, and protected from worthless, wanton and unreasonable destruction.

It is a burning shame, a foul blot on the character of Americans, and tarnish on their reputation for far-sighted economy, that their only idea of the treatment of the wild game of the woods and waters seems to be total annihilation. "After me a desert," is their motto; and they never rest till, by planting snares and liming streams, they have caught the last partridge and poisoned the last fish. Thus have they already destroyed one of the most valuable resources of the country; the Hudson, the Connecticut, the Penobscot, and even the Kennebec, yield no more salmon, and we yearly pay to Canada enormous sums for what we once had, and might still have, in plenty on our own shores. Not many years ago a person buying shad on the Connecticut River was required to take such a proportion of salmon. Now that the head-waters are covered with tanneries and saw-mills, and are crossed by dams without the simple expedient of a flume that the fish could ascend, and now that early salmon are worth a dollar a pound in New York market, where are the former denizens of the Connecticut?

All the timber cut on the streams would not pay for the damage done to the fisheries. In Canada the people have discovered, fortunately for them not too late, the importance of stringent protective laws. The nets can

only be set within a certain distance, and cannot extend across the entire stream. In Lower Canada the net fishing terminates on the first day of August, and the rod fishing on the fifteenth of September, and spearing, the most cruel, unprofitable and injurious mode of destruction, is forbidden altogether.

About one hundred and twenty miles below Quebec the wondrous Saguenay pours its dark waters and fierce current into the placid bosom of the St. Lawrence. It is one of the natural wonders of our still new and scarcely explored country. Hills rise a thousand feet sheer up, and its waters descend a thousand feet deep at their base. The St. Lawrence, at its mouth, is only some thirty feet deep, but the bottom suddenly descends at the entrance to the Saguenay, and becomes from five hundred to a thousand feet in depth. The breadth of the Saguenay is so great that the grandeur of the mountains is lost to the eye, and the scenery is remarkable more for ruggedness than beauty. At the mouth of this river was the first station of the Hudson Bay Company, a little village called Tadousac, which is pronounced with the emphasis on the last syllable, and in that village stands the mission church of the Jesuits, the oldest in the country.

Close to Tadousac, and almost adjoining at the back, is a still smaller village called L'Anse à l'Eau, and although great ships no longer lie at Tadousac, and the houses are fast falling to decay, and the good men of the olden days have long gone their last journey, and the trappers are never more seen around the famous station, and the glory of the Hudson Bay Company has departed,

the trout and salmon coast along the rocks and visit the inlets as they did when priests promenaded the natural terraces of Tadousac, and when the shortest road to the Northwest was up the Saguenay River. The trout care not though the iron horse has sprung two great leaps across the water that they live in, and know not that a woman, the only Catholic that can read, officiates as high priest in the sanctum of the woman-haters, the mission church of the Jesuits.

The St. Lawrence abounds with most delicious food for trout; there are acres of small fish; the sand eels crowd the bays yards deep, the sardines, the mullet, the capelin, the tommy cods, push and jostle their way along, while shellfish innumerable cover the sandy bottom. Flies swarm on the water, and the deep rivers in Winter and the cool streams in Summer constitute the paradise of the *salmonidæ*.

Along the shores of the tide water, early in Spring the trout and salmon make their appearance, and wandering about pass the merry days of May, June and July in feasting and junketing, in visiting new scenes and tasting every variety of food, till instinct warns them the waters are falling, and they must hasten to their sylvan bowers and enjoy the pleasures of love and paternity. Then slowly, the largest first, they leave the tide waters and swarm up all the practicable streams, running the rapids and steadily advancing to their pebbly spawning beds, which kind nature appears to have prepared in the heart of these impassable mountains for their especial protection. Through all this season, June, July and August, the fishing is magnificent; they are in great

numbers, and of immense size ; but after they have once left the salt water, the angler must accompany them in their ascent if he would continue his sport, and by day struggle in his canoe against the rapids, up which he hears them darting at night.

While the fish are still in tide water, and the fisherman is fishing from the rocks, the head of some bay into which flows a stream of fresh water, and the time of the lower half of the tide, are both desirable. The former as furnishing a variety of food, and the latter as contracting the fishing ground. The eddies of a swift current, and the hollows of a rocky bottom are both affected by the fish ; although they are often found along a smooth sandy shore, chasing the minnows, and now and then dashing at a fly or sand-hopper thrown off the land. It is nothing unusual to capture a hundred fish in as few hours as it will require to land them, and often the only limit to the number will be the sportsman's humanity. They are a difficult fish to preserve ; it seems sacrilegious to salt them ; they are not good pickled in brine, and smoking is both injurious and troublesome. The fisherman, if he would not have them rot before his eyes, must put a bridle on his eagerness.

They run very large, sometimes above a dozen pounds, are often taken of five and six, and frequently a whole day's catch will average three pounds. They are found at the mouth and along the shore of every river that empties into the lower part of the St. Lawrence. They ascend the Saguenay, and are taken at and near its mouth in great numbers, and in fact everywhere in the

lower St. Lawrence and all its tributaries they abound. It would be more difficult to tell where not to find them than where to find them. But the best trout-fishing season is later, when they have followed the salmon and retired to the upper waters of the mountain streams, where they lie together in shoals, in the deep pools. Then they may be traced by the wake their motion leaves in the water; then may the fisherman, casting a long line and careful fly, pick the finest and go on fishing till heart and soul are satisfied. There, amid the wild scenery, at the foot of the granite hills, by the shade of the stunted spruce, he may take his stand upon some point of rocks, near to a black pool, and deftly wielding the slender rod, may bring to the net one after another of the mighty denizens of the water. But even then, if he would take the mightiest he must prove himself a sportsman by keeping out of sight and casting far and straight. And when his sport is terminated by the declining day, or his ample satisfaction, and he meets his companions round the camp-fire, over a well cooked supper improved by a vigorous appetite, he will exchange experiences of the habits of fish or the arcana of the angler's art.

If, however, he loves the "wet sheet and the flowing sea," a nautical anomaly, by the way, he may pursue his prey in the open bays, and with a smart breeze and long line, and gaudy fly dancing from wave to wave, have great sport. Under these circumstances the fish are almost uncontrollable and must be often followed with the boat for a long way before they can be killed. It is gloriously exciting, the bright waters sparkling with

foam, the light boat leaping over the billows, the sky magnificent in its depth of blue, the fresh breeze cool and strong; and the fish just hooked, furious, vigorous and courageous, rushing hither and thither, plunging to the bottom or springing high out of water. Then the exciting chase as he takes off fortunately down wind, and exhausts all but the few last turns of line on the reel till it becomes a question of speed between him and the boat, and at last his final surrender and capture. Truly is it magnificent.

Rivière du Loup, a little Canadian village situated on the St. Lawrence, opposite the mouth of the Saguenay, is now connected with Quebec by railroad, and is only a day and a half distant from New York. It affords good accommodations, but there is no place anywhere on the Saguenay or at its mouth where the traveller can stop. * The Habitans although generally willing to offer such accommodation as they possess, are too dirty in their habits, and often too much beloved of creeping things to suit American taste. So that as there is little or no trout fishing at Rivière du Loup, the angler must make his arrangements for a camp-life, and would do well to descend the St. Lawrence in a pilot boat, which he can hire with a man and boy for two dollars a day, and stop at the mouths of all the streams that debouche into it. The river is over twenty miles wide, and he must look out for storms, as these boats are open and by no means good sea boats. At night he can go ashore, build a fire, put up his tent, and call into requisition the numerous luxuries this mode of travelling will enable him to carry.

* A fine hotel has been built at Tadoussac.

A steamboat ascends the Saguenay twice a week, and he can either take it at Quebec or join it at Rivière du Loup, and by this means enjoy a trip through the bold scenery of that celebrated river, and can either return to Rivière du Loup, or take a pilot boat at L'Anse à l'Eau. There is a generous-hearted Englishman living at L'Anse à l'Eau, but he has been compelled to refuse admission to all strangers, as any infraction of that rule would have led to his being overrun.

Many of the streams of Lower Canada are leased to private individuals, and there are few good accessible salmon streams open to the public, but the sea trout fishing along the St. Lawrence and at the mouths of most of the streams is free to all. In Nova Scotia and New Brunswick, and at Prince Edward's Island, there is as yet no restriction, and both salmon and trout are the property of him who can catch them.* Nowhere, however, can any salmon fishing or good trout fishing be had except by camping out. Canadian canoemen can be obtained, if not required to furnish canoes, for sixty cents a day, although the Indians, who are far superior, command over a dollar, and where the angler is unacquainted with the water he is to fish, he had better take the latter. They are, however, willful and exacting, and sometimes stubborn and troublesome, while the former are the best-natured fellows in the world, full of fun, song and frolic, but often too fond of the liquor case.

The best river of Lower Canada is the Mingan, but if it is not already leased it soon will be. It can be reached by steamer that leaves Quebec semi-weekly, stopping at

* License is now required for fishing in the British Provinces anywhere.

Gaspi, at Bathurst on the Bay de Chaleurs, which is near Nipisiquit, the best river of New Brunswick, at several places along the route, and finally at Shediac, whence there is a communication with St. John or Halifax. The steamer running at the time this is written is the Arabian, and leaves Quebec every alternate Monday. The Nipisiquit is within a few miles of Bathurst, where there is good accommodation, and boatmen can be obtained without difficulty, or the fisherman may continue his travels to Dalhousie, at the mouth of the Restigouche, and try either that or the Matapedia. Another mode of reaching the fishing grounds, is to go to St. John, and thence by steamboat to Fredericton, and cross over by land to the Miramichi, at Boiestown, where there is excellent trout and fair salmon fishing. A list of the distances from Quebec, together with further instructions, is given under the head of salmon fishing, as the rivers we have mentioned are properly salmon rivers.

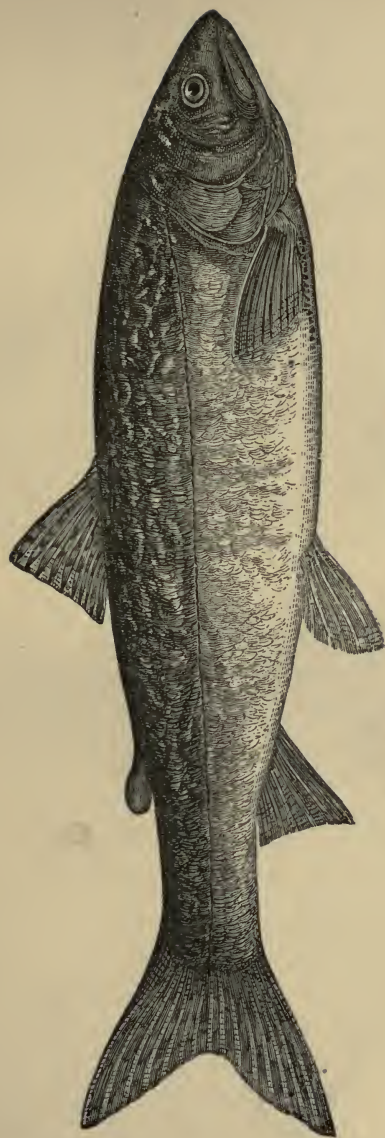
The sea trout fishing is so fine, that many persons prefer it to taking the larger salmon, and can be indulged in almost anywhere along the shores of New Brunswick, Nova Scotia, Prince Edward's Island, Newfoundland and Lower Canada; and were it not for the heavy fogs, the Bay of St. Lawrence would be a favorite resort of our adventurous yachtsmen. The Galway line of ocean steamers now touches at Newfoundland, whose waters abound with the finest fish.

The sea trout ascend to the head-waters of the Miramichi quite early, so that there are none of large size to be caught in the lower section by the middle of

July. In that river they average from two to five pounds' weight. But the Tabasintac, a stream half-way between Chatham and Bathurst, is the most famous sea trout river of New Brunswick. I do not know of any sea trout along the southern shore of New Brunswick.

The scientific designation of this fish is not yet settled, although the United States Fish Commission have given it their attention, and it is to be dreaded that, numerous as he still is, the sea-trout will have disappeared before we know what to call him.

Canada and the Provinces have been immensely developed since much of the above was written; travel is easier, pleasanter, quicker, and accommodations better. But with this improvement have come fishing restrictions, license fees, and government interference, which more than counterbalance the advantages.



LAKE TROUT-SALMON TROUT-TOGUE. (*Salmo confinis*)



CHAPTER IV.

A TRIP TO THE LA VAL.

A BEAUTIFUL breeze was blowing down between the grand old hills of the majestic Saguenay on that first day of August when Walton* and myself started from L'Anse à l'Eau in one of the oddly-shaped pilot-boats of the St. Lawrence, for a visit to the Bon Homme la Val. The Bon Homme la Val, a beautiful and romantic stream that falls into the St. Lawrence about sixty miles below the Saguenay, tradition asserts was named by the pious Canadians in the early days of the country after a beloved father confessor. But time and the English, equally utilitarian, have contracted it into simply La Val, and the origin of the name, together with the piety that suggested it, is almost forgotten by the present generation. The sun was shining brilliantly, and the strong northwest wind curled the waves of the ancient river, and crested them with foam; the dark waters surged in their falling tide; the stunted trees shivered in the blast; while the granite hills were as immovable as they had been mid storm and calm for many thousand years; but the pretty little village was all astir with our departure.

It is a fanciful place, with the white houses perched in a nook between the whiter rocks, while the

* Hon. Wm. F. Whitcher, late Superintendent of Fisheries of the Dominion, and as skillful an angler as ever handled rod or wet a line.

graceful roofs and white-washed walls shining in the sunlight, produces a picturesque effect. The few English families residing there, and their many friends on visit to them, made an agreeable society, drawn closer together by its seclusion from the world at large; and bright eyes looked brighter when there were none others by.

The world of L'Anse à l'Eau was collected on the wharf to witness our departure—the Canadians because they had no better employment, the English that they might bid us adieu. Our pilot-boat, called by the Canadians *chaloupe*, an open boat some five-and-twenty feet long by seven wide, was crammed full of our numerous traps, plunder or baggage, as it would be variously styled in different parts of our land of freedom. The fishing rods, and one gun, devoted to the destruction of bears for lack of smaller game, were carefully stowed; small barrels, at present filled with meat, but destined to return filled with fish, lay side by side with baskets full of more delicate provender; tents, bedding and innumerable other articles occupied every inch of room. We were experienced in woodsman life, and had no idea of suffering the want of luxuries that could be easily carried with us, and would never trouble us on our return, unless they did it in spite of our teeth. There were preserved soups, meats and fruits, sauces of many kinds, tea and coffee, the latter ground and in bottles of essence; there were brown, white and maple sugars, concentrated milk, flour, indian and oatmeal, barley, rice and potatoes; liquors of many kinds, and other things too numerous to mention. For our protection from the weather, we had two tents and waterproof cloth suffi-

cient for a make-shift, two indian-rubber blankets apiece, one coated on the side the other in the middle, waterproof suits, plenty of blankets, flannels, and warm clothes; and such other things as a gentleman ordinarily carries on a journey. As a defence against the mosquitoes, black flies, sand flies, and other like torments of Satan's invention, there were veils, the oil of tar, and a mixture of glycerine, turpentine and spearmint. Above our treasures were carefully stowed our two canoes, bottom upmost. In a heavy sea they cannot be towed, as they are apt to fill and tear to pieces.

Few persons know how beautiful and delicate a canoe is. It is manufactured only by the Indian; in that the white man has never equalled him. The best is made from a piece of white birch bark, stripped from the tree in springtime, damped, and after being cut away to the requisite extent, molded into the proper shape. The inside is covered with gum, and a thinner piece of bark fitted upon it, so that though the outer bark be torn, it still does not leak. Over this are passed thin strips of red cedar, lengthwise of the canoe, and crossing them at every inch are ribs of the same wood. The gunwale is formed of a stout stick of hickory or ash, laced to the sides, and four strong but slender thwarts bind the whole firmly together, and serve for seats or supports. Inferior articles are made of but one thickness and of poorer bark. The shape differs according as they are manufactured by the Mountaineers or Micmacs, the two tribes of this region, the former building a long, narrow and graceful boat, easily capsized even for a canoe, and well suited for travel in smooth water; while the latter build

a broader and flatter boat, drawing little water and better suited for shoals and rapids. They are mostly manufactured on the south side of the St. Lawrence, birch-trees of the requisite size having almost disappeared from the north shore. The bark is composed of innumerable layers, and is the only known substance that would stand the rough contact with rocks that canoes experience. A volume could be written on the wondrous qualities of birch bark, the woodsman's invaluable treasure; to him it is a boat, a tent, a table, a plate, a cup, a basket, a pail, a basin, a frying-pan, a tea-kettle, a candle, a flambeau, a cooking oven, writing paper, kindling wood, and almost all the other conveniences or necessities of life.

The chaloupe being loaded, a long farewell shouted loudly that our spirits might not fail, and we turned our backs on L'Anse à l'Eau, the pretty bay at the water-side. The jib was set, and the *grande voile*, or foresail, together with the *tapecu*, or jigger, while the mainsail, called by the Canadians mizzin—for we were a three-masted schooner—was brailed up, not only to give us more room, but because the open boat was then under all the sail she could stagger to. The French are a wonderful people; strange and incomprehensible are the sailing vessels they have produced; but in Canada, aided by the antiquated notions of the English, they surpass themselves and manage to combine in their pilot-boats all the defects of which either system is capable. While the rest of the world has discovered that the more sails a small boat carries the slower she will go, they have carefully cut up what should have been one sail into four;

and whereas a pilot-boat is mainly wanted in rough weather, and should be capable of living in any sea, they have built them open, and any heavy wave breaking aboard would swamp them in an instant.

But of all wonderful productions of the human mind the jigger excels; a mast is stepped alongside the stern-post, with a little spritsail hoisted on it; a stationary boom, or out-rigged, is fastened in the stern and projects aft into the water; in the end of this boom an augur hole is bored, through which is rove the sheet to the jigger, and the sail trimmed down or eased off. By this ingenious arrangement all possible disadvantages are combined without one conceivable advantage. However, not to condemn unreasonably, there are conveniences in this singular rig. The bowsprit can be taken out and used to shove off from rocks or a lee shore, and as these vessels are never known to go to windward, that is important; the sprit of the jigger can be used to boom out the mainsail when going wing and wing; any passenger, finding a sail incommodes him, can reach up and wrap it round the mast, out of his way; and in fact, if he were to pull it down and put it in his pocket, no one would miss it; and finally, a Kentuckian might find the mainmast useful, with a little whittling, as a tooth-pick. It is also rather perplexing that the Canadians should call the foresail the *grande voile*, which is the proper name for the mainsail, and then call the mainsail the mizzin, in pronouncing which they endeavor to cheat the last syllable of its vowel; whereas, the jigger, if any, is entitled to be called the mizzen. Instead of having a cabin, like Christians, they have amidships, for it is a

keel boat, what they call a *boîte*; and sure enough it is a box, as long as the width of the boat, some seven feet, about two and a half feet deep at the lowest part, and rounding to the shape of the bottom, and three and a half feet wide. Into that they crawl, and two men and a boy have been known to sleep comfortably.

Such was the vessel that was destined to bear us sixty miles down the broad St. Lawrence, and was soon tearing along under the fierce wind that crested every wave with foam. Fortunately, our course lay along the weather shore, for our open cockle-shell would not have lived a minute exposed to the full sweep of the blast and the sea it must have raised on the other side of the river, or even a few miles from shore. Once in a while, a little dash of spray would come hissing on board, or fling itself into our faces; but as the wind was free, we could carry on sail as long as she could keep above the waves, or until she carried the masts out of her. Even that ungainly vessel, driving on in the seething waters, carrying the canoes on her deck, and with her sails straining in the blast, must have been more than picturesque.

On we tore, skirting the dreary, inhospitable coast past the village of Tadousac, past the Moulinbaud, the Escomain, a river once famous for its salmon, but no longer so; past the Patte de Lièvre, a rock of the shape of the hare's foot, where many years ago the sea gave up its dead, and a cross now stands to mark the grave of the lost nameless one; and the last puffs of the wearied blast urged us quietly into the outlet of Sault de Cochon. At the mouth of this river there is a steep fall, down which once a hog hastily descended much against her

will; in her death covering herself with immortality giving her name to the torrent that destroyed her.

Hastily launching one of the canoes, and rigging up our rods, my companion and myself, eager for the fray, commenced tempting the innocent inhabitants of the deep with delusive baits. Evidently Mr. Red Hackle was not one of their intimate acquaintances, and they took to him amazingly. The god of day was already declining behind the western hills, and casting long shadows over the now placid water, but the fish leaped at the fly in innumerable numbers, giving us such sport as we at least never enjoyed before. At almost every cast a trout, varying in size from a quarter of a pound to two pounds and a half, plunging out of water, seized the fly fearlessly in his mouth, while often two or three were on the line at once. Large or small, they were most vigorous, making fierce struggles and mad rushes to escape, their silver sides glancing through the water, and their tails lashing it into a foam. No dull, heavy, logy fish were they, but active and lively, and excellent was the sport they gave; so that when our men, having improvised a kitchen on the rocks, called to us that supper was ready, we were loath to leave our sport. It was then eight o'clock; we had been fishing about three hours, and over one hundred and twenty fish, averaging about half a pound, were the net reward of our skill.

The scene, as we took our supper upon the end of an old tumble-down dock, was peculiar. The light of the fires, making the surrounding darkness the deeper, served alone to illumine with lurid brightness the faces and fantastic dresses of our men, while the roar of the cataract

shut out all other sounds. The chaloupe lay below us, its outline just defined upon the dark water, while we, seated upon a log, drank our tea and feasted right royally upon fresh trout and other comforts that civilization had provided us.

Truly incomprehensible are the Habitans of Canada. One of the few inhabitants being without any eatable thing in the house, having scraped the flour barrel till he had scraped off splinters of wood, and, except for our arrival, without the prospect of a meal for the morrow, had soothed his sorrows by inviting his neighbors to a ball. Of course there was no supper; but the music of one fiddle, and the merry spirits of the Canadian girls made up for the deficiency, and when we joined them, after our tea, they all seemed as happy as though stomachs never grew hungry or limbs tired. Being politely offered the belles, we joined the festivities, our potables adding to the merriment of the party, till, with the prospect of a hard day's work on the morrow, we thought best to retire to the dressing-room and camp upon the floor for the night. Although the bed was hard, and our rest somewhat disturbed by visions of beautiful creatures arranging their hair and dresses by the light of a tallow candle, before the looking-glass in our room, and at last donning their hats for a final departure, we slept tolerably, and the early dawn saw us on our feet, preparing for our departure.

While the men were carrying out our directions, in anticipation of a long absence from civilization, the attractions of the finny tribe were too seductive, and we, yielding to their enticements, again cast our lines in plea-

sant places, and again, in about three hours, captured over eighty of the speckled silver-sides. The largest weighed two pounds and a half, and was the best fish taken, thus far.

The barrels were arranged, the salt was purchased and stowed, the canoes made fast, the sails set, and, blessed by a still more favorable southwest wind, we got under way for La Val. Its mouth was only about one mile distant, but we intended to ascend it as far as possible with the chaloupe, on the rising tide, and were thankful for the favoring wind. At its outlet lies an island of the same name with the river, behind which stretches a broad, rocky, shallow bay. We escaped by grazing several rocks, and entered a sluggish, canal-like, dirty river, as unlike the La Val of a few miles above as anything can be conceived, and ploughed our way through crowding shoals of sardines, that rose so thick as to tempt us to try to catch them with a scap net. But where the rocks began to be visible as the water became clearer, we drew the chaloupe to the shore, and anchoring her stem and stern, loaded our canoes for the ascent of the river. We took with us the essentials of our camp life, intending to send back for the superfluities after we had established a permanent camp; the river being too low, our canoes would not carry a heavy load.

Armed with iron-shod poles to shove up the rapids, and paddles for the deeper pools, our Canadians took their places and we commenced our ascent. My companion was an expert canoeman, but for myself it was my first real lesson in the unsteady little shells, and seated upon the bottom I awaited every moment a

sudden bath. Here the water was comparatively smooth, and little was I prepared for the falls and rapids that were ere long to steady my nerves for anything, and prove what a canoe can do when it is well handled.

While our head guide, with the musical taste that is inherent in the French nature, rang forth—

“Aimez-moi Nicolas,”

the paddles were being plied vigorously, and we shot into the narrow cleft that forms the bed of the La Val. Straight up from the water's edge sprung the hills on each side, their grey rocks scarcely half covered with stunted spruce, pine and hemlock, and rarely leaving margin enough for underwood to grow upon the bank. The water, now limpid as crystal, poured down in an ever increasing current, and here and there boiled over a hidden rock. On we forced our way, a bald eagle the only contestant for our sole occupancy of the river, past the grey cliffs, the sombre trees, through dark pools, up rapid currents, by banks of clay greyer than the granite hills themselves. On, on, with steady exertions, at every moment ascending toward the source of the wild stream. The water became shoaler, the currents stronger, and the rapids more rocky as we advanced.

Poling up the rapids was strange indeed. Imagine a torrent pouring, hissing and boiling down over rocks, where the foam glistened and the spray danced into the air, sweeping through narrow channels and leaping up and curling over in crested waves; imagine a light, fra-

gile boat, that a man could lift with one hand, forced against such a current, between or even over the rocks, swayed about, swept hither and thither, and once in a while caught broadside on, and, unless quickly righted, carried to instant destruction. Imagine the excited efforts, the quick directions of the steersman, or forward boatman, whose care it is to head the canoe straight, to choose at a glance the deepest channel, and to keep her clear as possible from the rocks. "*Arrête! avance! pousse! à droite! à gauche!*" with a thousand others, come streaming forth as she touches, swings round, or tries to take her own head. At times she stops entirely, and by main force alone is she pushed over; the rock being distinctly felt as it bends the thin bark, that by its elasticity gives to the pressure and springs to its place the next instant. The men stand erect, exerting all their strength, and handle their poles like a Paddy his shillelah, first on one side, then on the other, then in front and then behind, the iron taking a firm hold of the slippery rocks. Such was our ascent, and deeply interesting it proved to me, although at first it seemed inevitable that the foaming water must engulf us all, and, destroying our provisions, leave us, if we escaped at all, shipwrecked mariners upon a desolate coast.

I was glad, therefore, at every opportunity to quit the canoe, and clambering as fast as I could over the slippery rocks, post myself ahead upon the point of some *batture* or ledge of rocks, and cast the fly till the canoe came toiling painfully along. Great was my success, beautiful the dark pools, ever varying the limpid water. The treacherous banks of clay, so slippery that it was

scarce possible to stand on them ; the dark pines casting a gloomy shadow upon the water, the sombre depths where the current had worn away a cavern for the naiads of the watery realm, made together a picture never to be forgotten. While the innumerable trout were enough to gladden the heart of any true sportsman.

The day was passed and yet our journey not half done ; we halted for the night as "The shades of eve came slowly down," and Walton joined me with his rod while the tent was being pitched and the fire lighted. Glorious was our sport ; many a brave fish rose and sunk, and rose to sink no more ; either in that region the parent trout had not learned the infant song that in civilized localities they are accustomed to teach their children, or else the mothers did not know the latter were out ; for certainly they were not aware of the concealment of the cruel hook under the seeming insect. They showed no fear and we no pity, till the call of "supper" found us with over a hundred fish, averaging a pound and a half.

In conscious innocence and happiness we retired ; the fire was bright, the night was warm, the woods were still, the sand was soft, but oh ! the sand flies. They came down upon us more innumerable than the locusts in Egypt, and if Pharaoh had only been tormented with them, he would have given up in one night. I tossed and turned and rolled about, hid my head under the blanket, and covered it up with my handkerchief. All to no use ; they would still find some means of entrance, the little, invisible things ; and they bit till my face seemed on fire. Their bite does not itch like a mosqui-

to's, but burns, and I never again shall despise a thing because it is small. Compelled to surrender all hope of sleep, I gathered the dying embers of the fire, and adding fuel, drove away the pests, while, at the same time, with infinite relish, I scorched our men, who, to my previous disgust, had been sleeping during my sufferings as though they were in paradise.

By the earliest dawn I had waded into the river and made the discovery that fish, unlike the proverbial birds, will not take the fly too early. Just before the sunlight tinged the mountain-tops, they, thinking to provide their own breakfasts, provided me with mine, so that, when the time came to leave off, I had taken twenty fish weighing over forty pounds.

Immediately after the meal was over, we continued our ascent as rapidly as possible, dreading another experience such as we had endured the previous night, and hurried on to reach our regular camping-ground and pitch a proper tent. On the way, I only had time to catch fifteen, weighing thirty-seven pounds, the largest being of three pounds and a half, and late in the afternoon hailed with pleasure the information that at last we had reached the spot that was to be to us for some time our home. It was a beautiful location; the stream, by a sudden bend, forming a low, long point of land, nearly level, which had been, by previous camping parties, entirely denuded of underbrush and partly of trees. In front, midway in the river, was a large flat rock, beyond which, extending to the further shore, and just fairly within casting distance, lay a deep, black pool. A dead tree leaned over this rock from our side of the

river, forming a perilous swinging bridge by which one could reach it dry-shod. Directly across a cool spring brook entered the La Val at a place where the shore was a mass of overhanging underbrush. A pathway had been cut through the woods by some previous salmon fishers to the pools above and below ; and with the poles, benches, boards and other insignificant but useful articles left by our predecessors, our camping-ground combined every requisite with many luxuries. At five o'clock the tent was pitched, our necessary part of the arrangements, the head-work done, and Walton and myself commenced fishing. We stood side by side upon the rock already mentioned, and before dark had taken fifty-three trout, weighing one hundred and twenty pounds. They were most vigorous fish, and many a time did their continued runs almost exhaust our lines. We had fished at Sault de Cochon with three flies ; on ascending the river had diminished them to two, and now the fish themselves coolly reduced them to one. Almost invariably, if we struck two fish at a time, no matter what pains we took, one broke away with the hook. After a short time, we did not pretend to use more than one, and then had to take great pains in removing it from the mouth to avoid its being destroyed, so tough were the lips and strong the teeth of these noble fish. Indeed, it was soon effectually proved that any fly with the hackle wound from the shoulder to the bend was worthless, the first fish biting away the hackle, which should have been only wound close to the head. Heretofore the destruction of my fly had been a minor consideration, but now I found that I **must** look to myself, or, although provided with over

thirty dozen, there might be danger of my falling short. As it was, the fish destroyed in the course of my trip at least ten dozen.

A delicious night's rest was the reward of our efforts at arranging a proper camp, and in fact, henceforth there was no trouble from flies, mosquitoes, or any insect, except to a slight degree during the day-time; an annoyance that a segar would effectually dispel. From a quarter before seven to a quarter past eight next morning I alone took twelve fish averaging over two pounds, and during the day, while ascending the river for a short distance to investigate what now became to us a serious question, the depth of water, Walton and myself together caught twelve, and in the afternoon twenty-eight more. In the course of this day we established a rule to throw back all fish weighing under two pounds, a rule we adhered to till our last day in the river. The water proved to be very low, and although at night we occasionally heard the rush of a large fish up the rapids, the salmon had passed above and were probably on their spawning grounds, whither it now began to be very doubtful whether we could follow them. It was late in the season, as we knew, for salmon, although we had come prepared for them, and wished to catch at least a few.

We had picked up at Sault de Cochon, as a supernumerary, a boy of about eighteen, who was one of the most remarkable beings the sun ever shone upon. He would sit for hours with his mouth open and his hands before him, and, unless told, would hardly have sense to eat enough to keep himself from starvation. After dark, our men, with a hook and line and the entrails of a trout

for bait, caught some eels, and he, emulous of their success, took the line after they had finished, and concluded he would try his luck. Although he had been watching their proceedings for an hour with the deepest interest, he had no idea what they used for bait, and was forced to inquire. They, with peals of laughter, suggested alternately "a cup of tea, a bit of biscuit, a little ale, a lump of sugar," and such other anomalous baits. Although he at last succeeded in ascertaining from them what they used, it was not to be supposed that he would catch anything; in fact, it is highly probable he fell asleep over his rod and slept till morning.

The next day we prepared for a portage of five miles to the Lake la Val, a pond of some two miles in length by one in breadth, formed by the river's spreading out and filling a valley in the hills. Walton donned a heavy basket, Joe, our chief canoeman, took the canoe, while François, the lazy boy, carried a bundle of bedding. We crossed the river, and striking directly into the woods, followed an Indian trail that had probably been there before this continent was discovered by Columbus. The mode of carrying the canoe was truly original; it was reversed and mounted on Joe's shoulders, and his head being entirely concealed, he steadied it by holding to one of the cross pieces, and, at a distance, looked like some strange animal with a huge trunk, supported by two little legs. It was surprising how he managed it through the trees and among the underbrush, and even ascended places where we were compelled to give our legs the aid of our hands, not, however, without strenuous exertion, and the perspiration streamed from him

when, after accomplishing about a mile, he leaned it upon a fallen log and slipped from beneath. Then the warning my friend had so often given me never to wet the bottom of the canoe, because it augmented its weight so terribly, came forcibly to mind. Fortunately François waked up, and having volunteered to carry the canoe over the next stretch, and it being ascertained, to every one's astonishment, that he knew how, proved himself for the first time of any value, and shortened our journey considerably. During the portage we saw our first game, a spruce grouse so tame that no efforts we made could induce him to fly. He escaped death, primarily because we had no gun, and secondarily because it was out of season. At last, after a trying journey for our men, we passed a deserted lumbermen's shanty, and found ourselves upon the sandy shore of the lovely Lake la Val.

This beautiful sheet of water, lying amid high sterile hills far from the abodes of man, has remained, and will continue for centuries, unvisited except by the native Indian or the adventurous sportsman. Romantic in its location and appearance, it is remarkable for the number and apparently irreconcilable character of the fish that inhabit its waters. While the voracious northern pickerel and giant mascellonge inhabit the upper part, and the fierce, greedy and powerful salmon have appropriated the outlet, shad or mullet and lake trout, both comparatively inoffensive, dwell in the centre, and doubtless prove an easy prey and grateful food to their natural enemies on either hand. Along the upper margin, weeds grow, and the bottom is in places soft and

muddy, while the residue of the shore and bottom is firm white sand. The lake looked, in its broad expanse with the sun dancing on its rippled surface, lovely to us whose eyes had for a time been confined to a narrow gorge or the blue sky above.

Hastily launching the canoe, we descended the outlet, where the water poured over huge boulders covered with a long, weedy grass, the seeds of which had been washed from the lake. Walton was standing in the bow of the canoe, and shouted with delight, and waved his paddle enthusiastically in air as salmon after salmon flashed up through the water, and shot by, rapid as light. The sight made our nerves tingle, but it was useless to try for them; the water was too clear, and they were dark and long run from the sea. At one point he frantically shouted to stop, and hastily explained that he had seen five salmon and numerous large trout in one deep hole. In vain, however, did we cast our flies, they had been frightened, and probably rushed down the stream, for we could not stir a fin. Descending a short distance further, we halted for dinner, after which, taking advantage of a resting spell, I waded back to the same spot.

The pool lay close beside a little island covered with alders, and by crawling cautiously I kept out of sight, and reaching the head of the island, cast carefully and lightly round it into the pool. The line went out straight the full length, the fly fell like a snow-flake on the water, there was an angry rush, a mighty splash, a quick taughtening of the line, and an enormous fish was fastened to my frail tackle. In his astonishment he fortunately darted up stream, and by skillful manage-

ment was led round into the other channel, where, after many a struggle and desperate effort to escape, baffled only by prudence and care exerted through a long but exciting half hour, I landed him by walking into the water waist deep, and slipping the net under him. As for leading him to shore, my rod, already bent double would not bear the strain. He was a dark-backed, yellow-sided river fish, and weighed four pounds and a quarter. He was our champion prize, and remained so to the end. The water not having been disturbed, I made another cast, and was rewarded by another fish that weighed four pounds. A brace of beauties, fit to set before a king. The second one, however, so fought and flounced, and kicked and slapped about in the pool, in spite of all my persuasive efforts to induce him to leave it, that the rest grew suspicious, and refused the most seductive baits. My friend looked the least little bit envious when I rejoined him, and mentioned his having previously taken a sea trout at the Mingan that weighed nine pounds. I smiled, of course respectfully. We returned to the lake, having taken in all fifteen fish averaging three pounds, and leaving the canoe on the beach, wended our way through the woods back to our sylvan home, where Pierre received us with a redoubtable supper. Insatiable, however, I that evening took eight, and next morning three, from our preserve, as we called the pool in front of the tent.

As we intended to return to the lake, and might perhaps spear a pickerel, Joe made an *égog*, which appears to be the Indian name for fish-spear, the Canadians having not only adopted the word, but coined from it a

French verb, *égogger*, to spear. Armed with it, and provided with make-shift tenting materials, we hastened to the lake, and launching our canoe, tried its virtues upon the pickerel. The latter, however, were so scarce, that we rigged up the more effectual spinning tackle, and took a pickerel and a mascallonge of about twelve pounds each, and struck another of the latter very large, weighing, as well as could be guessed, from his passing close to the boat, about forty pounds. That night, provided with flambeaux, we went out for the purpose of again trying to spear pickerel; but, passing by the outlet of the pond, were so attracted by the numerous salmon, we could get no further.

It was a romantic sight; the canoe, lit up by the blazing flambeau, that was fastened, high above our heads, to a pole fixed in the bow, and by its glare made the surrounding darkness the more impenetrable; the silence of the night was unbroken, except by the dip of the paddle; and calmness of the water unruffled, through which the bewildered salmon lazily floated, following us about, coming so close that we could touch them with our hands, and occasionally jumping frantically into the air, utterly out of their wits and at the mercy of any poacher. Walton was excited, myself enthusiastic, but Joe was frantic; "*Egoggez donc! égoggez donc!*" he shouted, wildly pushing at the fish with his paddle, and almost ready to jump out of the boat. My friend held the spear in hand—he was a splendid spearsman, and could have filled the boat with salmon; but it was illegal as well as dishonorable to catch them in that manner—he wavered but a moment, and then with a sigh lay

down the spear and took up his paddle, the greatest example of self-command and honest sportsmanship I ever knew. General Washington, when he refused to be king, was no greater. My friend was not rewarded if he did not sleep happier for it that night in the old cabin on the shore of Lake la Val; and if the falling pipe of the rotting stove that nearly crushed his head had killed him, he would have died virtuous, respected and without reproach.

Oh, that I had the pen of Julius Cæsar, Homer, Shakspeare, or even Byron, that I might write an ode to sapin, the balsam fir-tree! Tree of the weary woodsman, tree of the luxurious sportsman, tree of all men whom the drowsy god catches in the woods and compels to his embraces! A bed of thy leaves is softer than one of eider-down, and far more comfortable. A prince might sleep on thee and dream he was in paradise. Thou preservest us from colds, from rheumatism, and the many ills that flow from the evil humors of the cold ground. Thy leaves, growing in one direction from the stem, will lie flat, and may be piled to any depth—a foot of luxury, as in our permanent camp—and make a couch that combines the softness of the feather-bed with the firmness of the mattress, and an elasticity purely thy own. To thee, and to thy mate the hemlock, and thy associate the white birch, I now, far from thee, waft, in a cloud of tobacco-smoke, my love. Go on, increase and wax great; may often the one support me on the land, the other on the water!

When the next morning's sun had once more brought round my birthday, the thirty-first that had ever dawned,

we commemorated the fact by undertaking to descend the La Val from the outlet to our home; a roundabout journey of some fifteen miles, in lieu of the portage of five. It was to be a final test of the depth of the water, as the course lay over bad rapids and falls, and we entered upon the journey with great uncertainty. Packing our temporary bedding in a water-proof blanket, our party embarked and sped gaily along for the first mile or two, but soon found the bed of the stream one mass of huge rocks, over which the canoe had to be driven with sheer force, and which tore and strained the fragile bark till it leaked terribly.

During this day our progress was necessarily slow and laborious, and to relieve ourselves we fished continually. The trout rose beautifully—in fact, in one pool they were so thick, sweeping round in shoals, that we grew surfeited, and left it for a spot where they were less plenty. Still it required a long line and light fly to cull the largest—which were the ones we sought—and skill and patience to land them. We might have taken hundreds had the time permitted, or our canoe been in condition to carry them; but every strain had increased the leak till we could no longer keep it down by bailing, and had to land from time to time to turn the water out. In fact, it was a wet time altogether; there was a drizzling rain, the canoe was three inches deep with water, we had both been wading part of the day, and had so arranged our water-proof blanket that it projected beyond the temporary tent, and catching all the water that drained off, would not permit it to soak through, but collected a miniature Lake la Val in the middle of our

bed. I being the heaviest, had the most of it; but by the aid of a blazing fire, I slept warm and comfortable till the morning air struck me, when the time came to rise, and sent a shiver to my very bones, giving me at first horrible visions of consumption, night-sweats and early death. Our tally of fish taken during the day amounted to fifty-three, weighing nearly two hundred pounds, and I had captured the greatest weight as yet taken at one cast, landing two fish, one of which weighed two and the other three pounds and a half. A handsome present the river gods made me for my birthday!

The next day, after an hour had been spent in vainly trying to attract the salmon, our journey was continued to the camp, the river as we descended proving worse, the rocks higher, the rapids fiercer, the water lower, our canoe frailer, till it came almost to dragging the latter over the bed of a current instead of floating comfortably along its surface. All hope of ascending to the head-waters was extinct, the rapids above the lake we knew must be worse than those below, and the latter were totally impassable for a loaded canoe. In our despair, we fished steadily at every breathing spell, and might have taken unlimited numbers, for they rose gloriously.

While walking unconsciously along, separated from my companions, I was fairly startled at observing what at first glance seemed to be a female figure seated on the opposite side of the stream beneath the bank. The impression was only dissipated by a close inspection. The rains had scooped out of the bank a dark niche, the edges of which were ornamented with vines and moss

and in it was seated a figure of clay, worn to an astonishing likeness of a woman with a gipsy bonnet on her head. She appeared to be seated, and her bonnet, its strings and her dress, were accurately imitated by the curling white birch bark. The color of her face seemed dark brunette, set off by the birch bonnet, that was brought out in strong relief by the heavy shadow of the background. Altogether, it was a startling apparition, and conjured up to my eyes the wondrous sights of the times of elfin power, when my spectre would have made a most perfect wood nymph.

Whether my elf gave me good luck or not, it is impossible to say, but we caught thirty-seven magnificent fish, and after a hard day's work, during which we had toiled at the canoe and waded most of the way, the camp was no unwelcome sight. It required Pierre's best culinary efforts to restore our spirits, and soothe our disappointment at being unable to effect a further ascent, in which our worst forebodings were confirmed by Jermain, an additional guide who had followed us, and who reported from his Indian friends that the upper stream was impassable, the water being a foot lower than was ever known before. With sad hearts, therefore, the council of war determined that advance was hopeless, and retreat inevitable; even our splendid sport could not console us.

It had been drizzling all day, and the next morning we devoted to a general drying of wet articles—the camp looked like a grand clothes washing establishment, with lines stretched from tree to tree round a big fire, and hung with clothes. I took some seven trout for dinner, but otherwise the fish had a rest until the mor-

row, which was to be our last on the river, when we captured twenty-eight, a few of which, however, did not exceed a pound and a half in weight.

The next day came, and good bye to the beautiful La Val. Slowly and sorrowfully we struck our tent, sadly we collected together, and stowed the many little articles that the occasion had hallowed to our hearts. With feelings of deep regret we embarked, and looking our last look at the camping-ground that had been our home, commenced a descent to our chaloupe. As there were three canoes, and only five canoemen, including my friend, I was gladly compelled to take the bow of one and act as steersman. Of course my experience was limited, for, with the exception of having once upset Walton to his intense disgust, I had taken little active part in canoe management, and having for my stern-oar, Joe, whose only idea was to push ahead under all circumstances, we performed manœuvres that astonished more than they delighted our associates. Ours was the leaky canoe that had been patched up with gum and a piece of a shirt for the occasion, and being utterly reckless of it, we shot down rapids and leaped over rocks like a runaway race-horse. Wonderful were our hair breadth escapes; the rapid water, Joe with his "*Avancez toujours*," gave me no time to see and less to avoid the half-hidden dangers, even if my skill had been equal to the task, and we darted along amid the foaming current, or plunged headlong down cataracts, at a rate and in a manner that would have surprised a locomotive off the track. We succeeded, however, in keeping straight with the current, and although once or twice our destruction

seemed inevitable, we finally arrived safe, though in a leaky and dilapidated condition, at the place where we had anchored our chaloupe. The latter, left to herself, had been trying what she could do on the rocks, and had succeeded, with the aid of a falling tide, in upsetting twice, and so frightening the boy in charge of her that he had fled for refuge to a shanty, which providentially was near at hand.

Joe had taken the opportunity during our last day's fishing, on hearing of the misfortunes of his boat, to remove her to the Sault de Cochon, so that we had to paddle about two miles in the open St. Lawrence. The river was over twenty miles broad, and, under the influence of a southwesterly wind, was so rough that our unsteady bark danced, tossed and rolled about uncommonly. I could no longer stand up, as I had been forced to do hitherto, and was brought to my knees at once, while even Joe found it safer to sit down on the thwart. No one who has not tried it can imagine what a canoe is in the slightest sea-way; it appears to bob from under you, and rolls and dances so quickly as to render staying in it almost impossible, even if it should not carry out its evident design to turn bottom up. Once at Sault de Cochon and I again tried the fish, having taken, on the descent of the La Val, twelve, and was rewarded as I deserved, by total failure.

The wind had died out, the water lay a perfect mirror, and, crowding down into the narrow cock-pit, we slept till two o'clock in the morning, when a favoring tide helped us slowly along toward our destination. The night passed, and the next day, and we drifted by place

after place that we passed before with such rapidity, and sunset again found us only thirty-three miles on our way. We ran into a little bay at the mouth of the Escomain, where, having built a huge fire and eaten a hearty supper, we slept, on a bed of the softest pebble stones, soundly and sweetly till the first grey light of daybreak, when we continued our journey along a coast so poor that the best fed hogs are, as we were credibly informed, light and weak enough to be blown over by a strong wind, and mill-stones, to say nothing of the miller, starve for want of grain.

Again the hills of the Saguenay rise to our view, Tadousac rests calmly in its nook, and the sun shines on the white houses of L'Anse à l'Eau as when we left. Our trip is done. The La Val will live in our memory as long as we can cast a fly—aye, and when gout or age shall have laid us on the shelf. To you, my friend, the genial companion of my trip, I give my thanks; may we meet again, and once more stand side by side upon some projecting rock, as fish after fish rises to our fly. May you long live to enjoy the sport at which you so excel, and may you leave children that can cast a fly as well. To the stately St. Lawrence, to the magnificent Saguenay, to the beautiful La Val, a long farewell.

CHAPTER V.

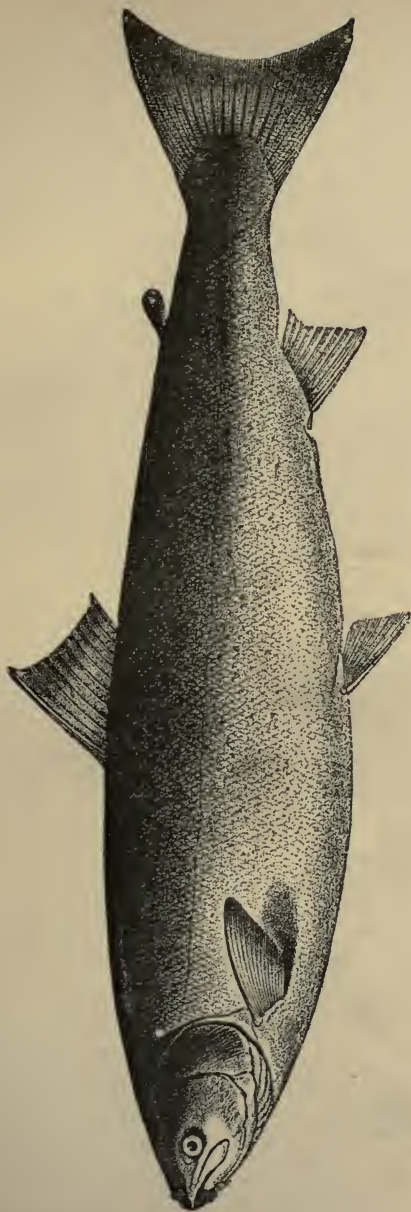
THE SALMON.

Salmo Salar.—This celebrated fish is totally different in appearance from the trout, having decidedly brilliant scales, colored bluish black down to the lateral line, and beautiful and white as glistening silver below. It has on the gill-covers and upper part of the sides occasionally dark irregular spots. The tail is more forked, and proportionally more expanded than that of the trout, while the fish is of a more slim and elegant shape.

The branchial rays are twelve, and the fin-rays are as follows :

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These splendid and valuable fish, whether regarded as an object of the sportsman's skill or the epicurean's taste, though once abundant in our State, are so no more. Hendrick Hudson, on ascending the river he discovered, was particularly struck with their immense numbers, and continually mentions the "great stores of salmon." The last unhappy fish that was seen in the Hudson had his adventurous career terminated by the net, near Troy, in the year 1840. The rivers flowing into Lake Ontario abounded with them even until a recent period, but the persistent efforts at their extinction have at last prevailed, and except a few stragglers they have ceased



ATLANTIC SALMON—(*Salmo Salar*.)

from out our waters. The willful, stupid obstinacy in building dams without fishways, in crowding the rivers with nets, and neglecting all measures for their protection, have annihilated the noblest of game fish. They are now only to be found in Maine, and to the northward of it. The rivers of Maine are no longer worth the angler's attention, and if he would have good sport he must proceed to the wilds of New Brunswick or Lower Canada.

In the wild woods of those famed regions they abound, and there, amid the solitude of nature, in its primeval grandeur, the writer has cast the fly over thousands, has lured hundreds from their hidden depths, and seen myriads moving about in their romantic pools, or darting away when disturbed; has waited, casting patiently, for their appearance; has felt the vigor of their first rush; has seen them leap, maddened, high out of water; has experienced all the variations of hope, the exultation of success, and, alas! the agony of failure. He has known them to dart away resistlessly down some impassable rapid, and leap for joy as they broke his frail tackle, and he has seen them panting with the gaff in their sides and the dark blood streaming over their resplendent scales, as his quick-eyed assistant had secured them at the moment the hook was tearing out. Aye, he once had the good luck of having one that was thrown out of water by the blow, the hook tearing out at the same time, caught on the gaff ere he fell back into the watery grave of hope.

The glorious sport! Ye delvers after the ore of gold, hidden as it seems to be in boxes of silk or bales of cot-

ton, in bits of paper or leaves of ledgers; ye weary crawlers through the streets of mammon, who think the world is bounded by the four walls of your ambition; ye who have been brought up to work, as though work were the aim of life instead of the means of its improvement; ye who have laid up a few hundred for some pet dissipation, a visit to Saratoga or Newport, or a fight with the tiger—that man-eater—and ye who must watch every day over your accumulated millions, lest a penny slip into a cranny and be lost, go to the woods, where you will be surrounded by the sombre trees, where the rocks will be your companions and the wind whisper and the stream prattle to you. There you will learn how little it takes to render man comfortable and happy, how but for his reckless passions and extravagant desires all might be satisfied and plenty crown the human race. There, where nature speaks to you in her beauty, in her grandeur, and occasionally in her stupendous power; where the wonders of the universe by day and night are ever present, like old friends; where there is naught but the thin air between the Maker and his beings, you may learn what will be more valuable some day than any treasure of gold or silver. Breathe the pure air, shake off every ill that flesh is heir to; add to your life, if you love it so well, a week for each day, and that a day of never wearying enjoyment. Take rod and gun, aspire to cast the line far and straight and light, feel the struggle of patience, perseverance, skill, resolution, with brute strength and cunning; know the pleasurable anxiety of the chase, the alternate hope and fear, and the final glory of success. Learn the woodsman's art, the “gentle

craft of venerie," and wonder at the resources of the wilderness, and on your return thank me not, if you can. But that you may do it well, read the following prosy instructions carefully, for if they be not entertaining they be useful.

The rod for salmon fishing should be from sixteen to twenty feet long; one of sixteen, or even fifteen, if well made and elastic, will answer. It must be strong and stiff, but not too heavy, and the further it will cast the greater will be the success. Salmon are more wary than trout; if they see a horrible, ill-shapen being, like man, lashing at them with a long whip, they lie close to the bottom, and it is only by keeping well out of sight, and never disturbing or approaching the pool, that they can be tempted. A short rod, though it may be capable of casting the requisite distance, will not give sufficient command nor enable the angler to lift the fly with facility.

The fly must be cast straight, light, and as far as possible; it must be put exactly upon the right ripple, and must fall like a snow-flake; it should, if the water is still, be allowed to sink a few inches and then drawn up to and along the surface a foot or so, again allowed to sink, and so on till it is raised for another cast. It is not moved as rapidly, nor with precisely the same tremulous motion as in trout fishing. Often a long time passes before a fish, no matter how plenty they may be, will rise; and when he does come, it is as often to play with and slap at the fly as to take it. Nothing is more provokingly exciting than to have a magnificent fish rush again and again at your fly, leap over and around it,

break near it or strike at it with his tail, without, however, showing the slightest desire to take it in his mouth.

A fish hooked foul, though he gives a great deal of trouble, and often breaks the tackle, does not afford half the legitimate sport of one that has the hook in the mouth.

When fish are playing thus, and it is fully determined that they will not take the allurements presented them, no matter how attractive, it becomes necessary to substitute another, and continue so doing till their dainty palates are satisfied.

When they finally take hold, have a care for their first rush; the pain, if pain they feel, or astonishment, drives them wild, and they dash and fling themselves about, leap out of water, and carry on generally in a manner to surprise weak nerves. Finding their efforts to escape vain, they will dart down the nearest rapids, and here they must be followed if the water is too shallow for the canoe, by the angler, with the agility of the antelope. He must have feet, hands, and eyes for everything. The fish must be guided through the safest current, the line kept clear of rocks, while the angler must pursue his course through pools and over ledges and bowlders, slippery with the water, and requiring the sureness of foot of the chamois. On, on he must go, regardless of falls or bruises, his reel making sweet music to the uncoiling line, keeping within sight of his prey till the latter reaches the next pool or resting-place. After an hour's struggle in this, he may take down another rapid in the same vigorous style. In these descents the angler will find his gaff, if shod with iron, a great convenience in

steadying his steps, and heavy shoes with iron nails will in a measure prevent his slipping and will obviate stone bruises, although they are apt to break the delicate knees of the canoe, and should be removed before getting into one, and moccasins or slippers substituted. There is a well authenticated story of one fish that was struck at six o'clock in the evening, followed down through three rapids, and finally lost at half-past ten o'clock that evening.

Salmon will sulk, remaining motionless at the bottom for a long time after they are wearied with an unsuccessful struggle, and must be aroused with pebbles, bearing on the line, or in some other way. Many of the pools in the Canadian waters have been worn out of clay banks, and their sides under water are often perpendicular or overhanging. When the fish sulks in one of these, the line cuts into the edge of this bank, and is of course broken to pieces by the first rush.

Gentleness will do much with fish, as with other reasonable beings, and a friend of mine saved a number in a pool above an impassable rapid, where other anglers had pronounced fishing impracticable, by striking and handling the fish with extreme delicacy till they were led to the head of the pool away from the dangerous neighborhood.

- There is no superlative salmon line made; the best, probably, plaited silk, tapered and covered with a preparation to exclude the water; but that in general use is of hair and silk plaited or twisted—a combination that, as we elsewhere remark, is by no means advantageous; a plain hair line is preferred by careful anglers, and sim-

ple silk will answer. The leader should be of single gut, if round and strong, and may be colored in tea. Double gut will break the rod but not save the fish. The flies, contrary to the received opinion in Europe, should be dark, especially clarets and browns, above all the impalpable "fiery brown," and of rather a small size, with a few larger for rough water. The reel should be large enough to carry two hundred yards of line, although with activity and a hundred an angler may make out.

As for the number of fish, even in the best streams, those who read Lanmann must receive his statements with, to use a moderate term, some allowance. Ten or twelve fish in the course of a day is excellent luck, and will keep the angler sufficiently occupied and excited, but the average good fishing through the season is not half that number, and there are many blank days. The upper shore of the St. Lawrence furnishes the largest fish, but New Brunswick the most abundant. The rivers in the former are mostly leased to individuals by the government, and of course closed to the public except by the consent of the lessees. That famous association called the Hudson's Bay Company, a kingdom within a kingdom, until a few years ago, were sole proprietors of fishing rights, but having taken pains worthy of our emulation to destroy the fish, the government curtailed their privileges, and passed stringent laws and regulations, which are set out in the appendix, for the preservation of the fish.

The rivers of New Brunswick are still free.* The fly-fishing in Canada lasts till the first day of September, and in New Brunswick till the fifteenth; but

* This is changed. There is no free salmon fishing in the Provinces.

the net fishing terminates earlier, and in Canada all spearing or fishing by torchlight is stringently forbidden. These laws are, strange as it may seem to us, enforced with commendable energy in Canada, though in New Brunswick our mode of letting the people override the laws prevails.

The best river in New Brunswick beyond all comparison, is the Nipisiquit, emptying in the Bay of Chaleurs, and near it are several almost as prolific.* In Lower Canada the Mingan, the Moisie, the Busamite stand preëminent, but have many rivals. Directions for reaching them have been given under the head of sea trout fishing, but instead of taking a sail-boat, as there suggested, from any port on the river St. Lawrence, the same might be done either from Bathurst or Prince Edward's Island, both of which are nearer the lower streams.

There are many excellent rivers on the coast of Labrador as far as the Straits of Belle Isle, or even farther, and they would be well worth a visit, either in one of our clipper yachts or in a fast schooner. Many are entirely beyond the realms of civilization, and a pleasant party night have a glorious time and abundant sport.

It would be necessary to take canoemen and canoes, or what is strongly recommended, small, light flat-boats that can be rowed or poled by one man, and which can be purchased for five dollars apiece at most of the gulf seaports.

Arm yourself, then, with two good salmon rods; they may be so made as to constitute a trout rod as well, not by any means one of those detestable nondescripts called

* The best river now is the Restigouche.

a general rod, but two rods distinct with joints fitting to each other. Take with you two good lines, plenty of flies, extra gut and hooks, leaders and feathers, and a strong hook gaff, but not that dangerous, unwieldy instrument called a spring gaff. Thus equipped, go forth conquering and to conquer, and may good luck attend you. Seek any of the rivers we shall name, ascend them in your fragile canoe, station yourself early in the morning or at the approach of evening, choose your best fly, keep well out of view, cast far and light, and may you many and many a time be rewarded with the fierce rush of the mighty salmon, his struggle and final conquest, and may your sleep be sound and your heart at rest amid nature's primeval hills. May the black flies and mosquitoes spare you, may the sand-fly not find you out, may the heat be tempered to you by day and the cold by night, may you not lose your footing too often, nor fall too hard, and may your fish be the largest, strongest and bravest that ever were taken. May you receive that mercy which you show, never drawing one drop of useless blood, nor causing one unnecessary pang.

The aid of all good men and true is needed both by precept and example, to save the tenants of the water from final extermination. By putting restraint upon ourselves, never being guilty of wanton slaughter, by steadily urging measures for the preservation of the game, and by invariably obeying and compelling others to obey such laws as should be passed, we may be able to leave to our children a heritage of pleasure that bountiful nature has abundantly provided for ourselves. No fish are more defenceless and more readily destroyed than

trout and salmon ; there are certain prerequisites to the continuance of the species that must be complied with. The fish must ascend to the fresh water to spawn, and if prevented by an improperly constructed dam, will quit the locality never to return.

It should be known that, contrary to the usually received opinion, salmon cannot surmount a fall of much over ten feet ; this, probably, is the full extent of their powers. And in effecting this, much depends upon the depth of water at its foot ; the deeper it is the higher they can leap. They do not take their tails in their mouths, according to the ancient theory, to enable them to spring higher, but rush with their utmost velocity from the bottom, and are carried by their momentum a considerable distance out of water. Such a leap or a struggle against strong rapids weakens them, and they must soon rest to recover strength for another ascent. They thus congregate below each fall, and often make many efforts before they overcome it. They usually move at night or early in the morning. A dam of fifteen or twenty feet will effectually exclude them from any stream, but may be rendered innocuous at small expense by placing below the wasteway boxes of heavy wood, with a fall of not over five feet from one to the other. A salmon leaps from the river to the first, from that to the next, and so on till he has overcome the barrier. A broad sluiceway leading at a moderate angle to the pool below, will probably answer as well.*

The fish, as they enter the rivers, may be deterred from entering, or all captured in nets spread entirely across the mouth, and when those that do pass have

* See Post as to modern fishways.

reached the spawning beds, they are peculiarly exposed to the cruel spear. At night, by this instrument, with the aid of flambeaux, hundreds may be killed and many more wounded and left to perish miserably. If they are to continue in reasonable numbers, nets must not be set close together, the spawning beds must be undisturbed, and the murderous spear utterly prohibited. With these precautions and a regulation concerning the sized mesh that is used, this valuable source of pleasure, health and profit may not only be retained but indefinitely augmented; without such care the day is not far off when "the places that knew them will know them no more," when their bright sides will no longer gleam beneath the waves or glisten as they gambol in the sunlight, when the nets will cease to yield a return, when the fishermen, longing regretfully for their most valuable prize, will find their occupation gone, and honest and dishonest, fair fisherman and sneaking poacher, alike be overwhelmed in one common ruin. Surely we have too much good sense, too much public spirit, too much energy and determination to submit to such a calamity; let us unite, then, in repressing unseasonable and unlawful fishing, in preserving and protecting the fish, and in restoring rivers that have been exhausted.

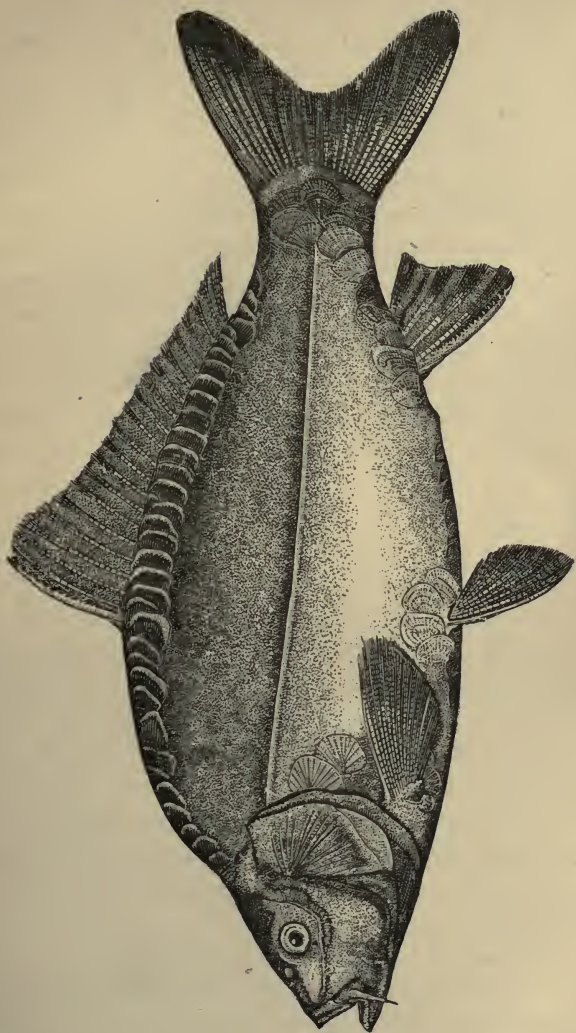
In the salt water, salmon never take the fly, and rarely bait of any kind, although they feed on sand eels and small fish in addition to shell-fish; but as they advance into brackish or fresh water, they either miss their natural food and become hungry, or get accustomed to feeding on grasshoppers and insects, and are deceived by the artificial fly, and will at times take the bait.

When they leave the salt water, the sea-lice that have fastened to them fall off, frequently to be replaced by fresh-water parasites, and this is sometimes given as the reason for their leaving the sea so early in the year, although they do not spawn till the Fall. While spawning they are unfit to eat, and after the operation are utterly exhausted. In this condition, when returning to the sea, they are termed kelts, the male being distinguished as a kipper and the female as a baggit. As the spawning season approaches, a curious cartilaginous hook grows from the lower jaw, which is supposed to be a provision of nature to prevent an unfortunate termination to the many desperate contests between the males at that period.

The habits of salmon are by no means determined; in fact, little is known positively about them. It has been even suggested that grilse are a distinct species, although it is hardly doubted with us but they are young salmon. Their times of visiting the fresh water are subject to peculiar individual exceptions; in fact, it may be said there are two opinions among fishermen, and persons who have watched salmon for twenty and thirty years assert that some are ascending while others are descending. Izaak Walton says that salmon spawn in August, which is directly contrary to the views of other English writers, and certainly not in accordance with the practice of our fish. Others again say they return to the salt water in September, and reascend the rivers later in the Fall. The young in all stages have been disputed over, and called by divers names, such as pinks, smolts, parr, brandling, samlet, peal, grilse, until one

hardly knows what sort of fish he really has captured. Every writer has his theory, and the following is mine; it may be true or not, but the statements of fact are.

Salmon are never found in our rivers except in three stages: First, a little fish much like a trout, but with a larger eye and richer colors; they have no blue spots, but have darker bands on their sides; they weigh from half an ounce to half a pound. Second, the grilse, which is precisely like a salmon, except that it weighs from two and a half to six pounds. Third, the salmon, which weighs from eight to eighty pounds. Salmon first appear in the fresh water about the 10th of June, and grilse a month later. The main run of the former is from June 15th to August 15th in New Brunswick, and from June 10th to July 20th in Canada. The explanation of this difference is simple: the Canadian fish are much the largest, averaging double the size of their more southern brethren, and as the waters fall during the hot months of Summer, they must ascend earlier than smaller fish, and before the spring freshets have entirely subsided, or they would never reach the high waters at all. Straggling fish, however, are running up at all seasons, early and late, and a few probably remain in the fresh water the entire year, or descend only when they are sickened by a lengthened residence in an unchanged element. Salmon do not spawn in Summer, but in Winter, commencing not earlier, and often later, than October; the fish that ascend last probably spawn last. Then they return to the sea; but not at once, some remaining under the ice through the Winter, others going immediately. My theory, therefore, is that the young fish, whether you



CARP.

call them fry, or pinks, or smolts, or peal, go to the sea usually a year after their birth, but with no invariable regularity, and will then average six ounces in weight, many undoubtedly waiting till the Fall, or eighteen months after birth; that they return the succeeding July grilse;* that the grilse spawn the following November, and after visiting the sea, reappear next Spring as salmon. The young fish are taken with the fly through the Summer in all the salmon rivers, and require a second glance to distinguish them from young trout, although they are very different, one decisive peculiarity being that their backs are arched or hogged, and another, as I have mentioned, that their eyes are large. The fry of trout—and recollect grown trout are not banded—have light sides, and are found usually in more quiet water. It would be well if sportsmen should call the fish in question respectively salmon fry, grilse, and salmon, and eschew all other fanciful names, as leading only to confusion.

Salmon are never taken in fresh water with any food in their stomachs; they are reported not to eat their young, and do not apparently feed on flies. The fry feed almost entirely on flies, and I have seen them pick off one after another as skillfully as a trout; but I have never distinctly seen a salmon take a natural fly. When they spring out of water, it is in play, and at such times, contrary to the rule with trout, casting over them will be in vain, they will not rise. Moreover, our flies do not in the least resemble the natural flies of the rivers, which are of a dull green, and the salmon rivers afford very few flies at best. Observe me, I do not refer to mosqui-

* Probably at least a year later than this.

toes or black gnats, at neither of which would gentlemanly fish deign to look. My theory, therefore, is, that salmon do not feed during the spawning season, but are supported by the animalculæ in the water, and have poor commons at that, as their miserable condition soon testifies. Many varieties of fish live without apparent food, often with the additional disadvantage of infrequent change of water, as goldfish in a globe.

When salmon first arrive in the harbors, they coast along the shore, and are then taken in nets, which are required by law to have a mesh too large to capture grilse; later, they leave the warm shallows, and follow the cooler channel beyond the nets, which are only permitted to extend a certain distance. The tide-water fishing is therefore practically over by the 1st of August. Net fishing above the salt water is forbidden, or at least subject to the same restrictions, which, if they were enforced, would almost put an end to it; but, discreditable as it may seem, and short-sighted as such conduct unquestionably is, this law is totally disregarded in many rivers, where of course the fish are rapidly diminishing. They spawn over gravelly flats and pools, covering up the ova after impregnation, and then descend slowly, greatly emaciated, ugly and woe-begone, to the sea. At such times, although they will still take the fly, they are unfit to eat, and while they notwithstanding frequently fall a victim to the cruel spear of the murderous savage, no true angler nor honest man will harm them.

Casting the fly gracefully and effectively is a peculiar art, hard to acquire, and picturesque to witness; it is altogether different from slashing the water, and almost

as difficult of mastery as the corresponding science of trout fishing. The rod, being long and comparatively heavy, must be held in both hands, which are changed occasionally so as to alternate that at the but, and teach the angler to cast over either shoulder. The line is lengthened to the proper distance, is raised with a springing jerk, swung out straight behind, and then again cast forward with the same springy motion. The work has to be done with the tip, which, except in casting against the wind, must be kept as elevated as possible. The stiffer the rod the more command the angler has over his line in avoiding the rocks and making the best of awkward places; but this is counterbalanced by the disadvantages of excessive weight and a stiffness in striking that frequently breaks the casting line. A rod will cast four times its length beyond the tip; one of sixteen feet, therefore, will cast sixty-four feet of line, ordinarily abundant; and although one of twenty feet will cover sixteen more feet, unless it is made of cedar it is uncomfortably heavy. A cedar rod would be perfection, but it is not to be trusted in the hands of a bungler.

When there is any current, and it is rare to take salmon elsewhere, the fly is cast across the stream and allowed to swing over the fish, which invariably lie with their heads up-stream. When a salmon intends to rise, he generally separates himself from his companions and waits till the fly approaches to the precise distance that pleases him. Then

“Strike for your altars and your homes,”

not too hard, but as quick as the lightning from the sky, and this although contrary to the English books, on the ground that a salmon, if he rises once and fails to touch the fly, will always come again. If, however, he has tasted the unappetizing morsel, and has not been hooked, for he is quick to spit it out, you will see him no more. If you fail to hook a fish on the first rise, it is well if you can keep your impatience under control, to rest him by casting elsewhere a few times, and if you fail to strike him on the third rise, change your fly. Salmon are extremely particular and dainty in their tastes, and it is never advisable to fish too long with one fly unless they take it well.

The great rules are—keep out of sight, change your flies and rest the pools. The best time of a clear day is early and late, and in the midday heat not a boat nor a line should disturb the water; in fact, a pool that a canoe has crossed is ruined for the day, and when there is no rising, there is little good in casting. A pool that is not disturbed at night would be found much better, as a consequence, in the morning.

But after your fish is hooked, after he is played and almost played out, after you have exhausted him, and brought him skillfully and carefully to shore, he is not yet in the pot; nor will he be unless you have an assistant expert with the gaff. There are all sorts of directions about this important operation, some authors saying a fish must be gaffed in the shoulder, others preferring the tail, some the belly, and some the back, but, in fact, one place is as good another; the main points are not to miss nor graze him, and not to jerk so hard as to throw

him off the gaff. To prevent this, where you anticipate finding only awkward aids, it is well to carry a gaff with a small barb, like an ordinary hook. I have had the indescribable pleasure of seeing my fish flung across the boat, and dropped in the water on the other side. The moment the fish is struck, the handle should be held perpendicular, so that he cannot flounce off.

The best size for this implement is a length of nine inches from the end of the shank to the middle of the bend, from the latter four inches in a straight line to the point, which should be delicate and sharp, and at least two inches and three-eighths from the inner edge of the shank opposite; the bend should swell out so as to be three inches across at its widest, and the end of the shank must be bent back and sharpened; the steel tapers gradually from the point to a thickness of one quarter of an inch. Being nothing more than a large hook, it is easily carried, and when wanted for use, fastened to any suitable stick by driving in the projection on the shank, and winding the whole with stout cord. For very large salmon, a stronger and larger gaff would be desirable, and for grilse a smaller one.

When fish run, and throw themselves out of water, some writers direct you to taughthen your line; but I say, heed them not. Your line is well out and sunk to some distance, the very jump of the fish will consequently bring a great strain on the hook, without your aid, and many a fish is lost by such usage. On the contrary, if you give to him as he leaps, you diminish the tension, and then the quicker you take up the line after he has fallen back, the better. If, on the contrary, when he

leaps he is near by you, and your line straight and out of water, he will try and strike it with his tail to break it, in which he may also be foiled by giving to him. My experience is to this effect, and you will soon find out, if the fish are large and strong, how hard it is to do otherwise.

It has been said that four times the length of the rod beyond the tip is the utmost length of line that can be handled with dexterity ; it is not meant that more cannot be cast, for I have often cast five times the length, but with an effort that soon becomes wearisome, and, if across a rapid current, without the requisite command. It is best to fish down stream, if possible, as otherwise your line sinks, and even in fishing across there will be considerable slack line. This is a second reason for rapid striking. There is another mode of managing a line, which is sometimes called casting, and by which a distance of eighty yards can be covered. The angler has a rod as thick at the tip as one's little finger, and a hair line as thick as the tip. Of course no reel can be used, as such a line would not run through the rings, or be contained on the barrel. The line tapers regularly to the fly. It is usually used in rapid water, and to cast, the fisherman waives his rod from side to side, lifting as much of it as possible clear of the water, and then throws out strongly with an underhand motion. The line rolls, as it were, raising itself from the water, as the impetus advances, till the fly is taken up and jerked over, so to speak, at an incredible distance. When a fish is struck he is drawn in by hand. I have not tried this proceeding sufficiently to speak positively, but think that

the heavy waxed lines now in general use would answer to a comparative degree. It is a difficult though not refined mode of fishing, and is the only way of casting eighty yards.

The following is a list of the principal salmon and trout rivers of Canada and New Brunswick, with the distances of the former from Quebec, and such information as could be obtained concerning their character and condition. Those marked in *italics* have been leased to private individuals, but the leasing changes year by year.

The *Jacques Cartier* is the only river near Quebec which, at the present time, affords any salmon.

From Quebec to Murray Bay is . . . 78 miles.

Here there is a river that furnishes a few salmon and many fine trout.

From Murray Bay to the Saguenay is 44—120

There is excellent sea trout fishing in the Saguenay and its tributary, the *St. Marguerite*, is a superior salmon river.

River Escoumain 23

Between it and the Saguenay are the two *Bergeronnes*, and both furnish a few salmon and many trout.

Portneuf 26

Plenty of trout and some salmon.

Sault de Cochon 9

Impassable for salmon, but affording excellent trout fishing at its mouth.

La Val 2

Superior salmon and trout river.

Bersamis miles 24—84

Affording in its tributaries many fine salmon; between it and the La Val are the Colombia, Plover and Blanche, all poor salmon streams.

Outardes 11

Manicouagan 16

Mistassini 12

Betscie 3

Of these rivers I can obtain no satisfactory information.

Godbout 15—57—261

A celebrated salmon river, one of the best in the province.

Trinity 15

Good salmon and trout fishing.

Little Trinity 10

Calumet 3

Pentecost 14

Not a salmon river.

St. Margaret 36

One of the best salmon and trout rivers.

Moisie 24—103—364

Fine large salmon are taken in this river, and it is widely celebrated.

Trout 7

Manitou 35

Good trout fishing; the salmon are obstructed by falls.

Sheldrake 16

Magpie 22

Furnishes a few salmon.

St. John 5
An admirable salmon stream.

Mingan 16—101—465

Probably the best river in the province for salmon,
and excellent for trout.

Romaine 9
An excellent stream for both salmon and trout.

Wascheeshoo 53

Pashasheboo 18

A few salmon.

Nabesippi 7

Agwanus 5

A fair supply of salmon.

Natashquan 14—106—571

Salmon fine and abundant.

Kegashka 23

Salmon impeded by falls.

Musquarro 15

Affords good salmon fishing.

Washeecootai 12

Olomanosheebo 11

Coacoacho 18

Contains some salmon.

Etamamu 21

Fine salmon fishery.

Netagamu 16

A fine trout stream.

Mecattina 4

Good salmon fishing.

Ha Ha 9

St. Augustine 6

Affords many salmon.

Esquimaux 14—149—720

An excellent salmon river, somewhat run down.

In New Brunswick there are salmon in the St. John and its tributaries, but the best of the latter, the Nash waak, has been closed with an impassable dam. From St. John it is easy to take the cars to Shediac, and cross to Prince Edward's Island, where there is magnificent trout fishing, especially near Charlotte, and tolerable accommodation; or one can take the Quebec steamer to Bathurst and fish the Nipisiquit, which is admitted to be the best river in the province, or the Restigouche and its tributaries, an excellent stream, but much injured by spearing; or the Cascapedia, which furnish some salmon and innumerable grilse. The Miramichi, between Shediac and Bathurst, is a fine large stream.

The streams in Canada emptying into the St. Lawrence from the south shore, are hardly worth mentioning as salmon rivers, having been ruined by mill-dams, with the exception of those that empty into Gaspé basin, but they all afford superior trout fishing. I would here remark, that where the name trout is mentioned in connection with the British Provinces, the *Salmo Trutta Marina*, or sea trout, is always intended; and the salmon fishing spoken of is fly fishing. The rivers that empty into Gaspé basin, such as the Dartmouth, York and St. John, are leased, as also the Bonaventure, that flows into the Bay of Chaleurs.

As explicit directions for travelling through the benighted regions called the British Provinces, the fol-

lowing are given from a somewhat unwillingly extended experience.

Take the night train or any route that will bring you to Boston before half past seven A.M., for at that hour the boat leaves for St. John, not St. Johns, which is in Newfoundland. If you are too late, you may still, by means of the cars, intercept the same vessel at Portland. This boat does not leave daily, but generally advertises in the New York and always in the Boston papers. It touches at Portland, where you may take a steamboat on its arrival to Calais, and proceed thence by railroad to the Scodiac River, where there is fine white, not sea, trout fishing, or stop at St. Andrews, whence there is a railroad in progress to Woodstock, on the St. John River. The Boston boat reaches St. John in about thirty-two hours, or at three o'clock; the fare is six dollars; the meals extra, and, consequently, extra good.

The Waverley House, in St. John, kept by J. Scammell, affords the best, though poor, accommodation, at a reasonable price. A train leaves on the arrival of the boat for Shediac, and makes the one hundred and ten miles in six hours, at a fare of three dollars. From Shediac a steamboat that connects with the train carries you to Chatham in twelve hours for three dollars and fifty cents, the meals being extra and infamous. At Shediac John Q. Adams keeps the Adams House, and will furnish information by letter as to the time of the starting of the boats. Bowser's Hotel is the best in Chatham. From Chatham to Bathurst, forty-five miles, you are compelled to travel in a stage that only leaves three

times a week, and never on the arrival of the boat, and will occupy ten hours of your time at a charge of three dollars and a half; or you may take an extra for sixteen dollars. If you hire one of Kelley, the stage proprietor, make a tight bargain, for he is Biblical and takes in strangers. In case you should be too late to reach Bathurst the same day, or have leisure on your hands, stop at the Half-way House on the Tabasintac, which has the last syllable accentuated, and fish that night and the next morning for sea trout. They are taken from a horse-boat in abundance and of great size.

In Bathurst there is a good hotel called the Wellington, kept by Mr. Baldwin, with the efficient aid of Mary; and also a more private establishment, by Bela Packard, which is the customary resort of Americans. There is a telegraph from St. John to Bathurst, and Baldwin will meet at Chatham any guests that send him word, and bring them to Bathurst for fourteen dollars. In the latter place, Ferguson, Rankin & Co. will furnish all the heavy outfit, such as pork, biscuit, butter, tea, sugar, tobacco, and will have them ready put up if written to beforehand. As it is customary on the Nipisiquit to loan the guides blankets, the same firm keep them on hand, and will lend them to those that buy stores of them. Once or twice a month the Arabian leaves Shediac and stops within a couple of miles of Bathurst, and if you can manage to suit your time to hers, you can go direct and be ticketed through for ten dollars. Her days may be ascertained at the office of the Boston boats, but it is well to telegraph to Bathurst to have a canoe to meet you, as otherwise you may have difficulty in reach-

ing town from the landing. The same steamer and its associate, the *Lady Head*, run to Dalhousie, at the mouth of the Restigouche, or a stage for that place leaves Bathurst three times a week. The *Lady Head* does not stop at Bathurst, on account of her draught of water.

On the Nipisiquit it is customary to have a camp-keeper or cook for the party, and two canoemen to each angler; they furnish the canoe and receive one dollar a day each. The following are good men: John, Peter and Bruno Chamberlain; John makes a good fly, but is sulky and willful; Bruno is lazy; Ned Veno and David Buchet, both of whom are excellent and willing, and Fabian Bodereau, who is a fair cook. To save your men some heavy work, where you do not intend to fish the Rough Waters, you drive with your stores to the Round Rocks, the Pabineau Falls, or, if you please, even to the Grand Falls, but the latter part of the road is bad.

The only fishing on the Miramichi is above Boiestown, and to reach it you leave St. John in the night or day boat for Fredericton, arriving there in eight hours at an expense of one dollar and a half. The night boat runs three times a week. The best house in Fredericton is the Barker House, kept by Mr. Fairweather, and in this city you must get your supplies for the woods. The stage leaves every Tuesday and Friday for Boiestown, nominally at ten A.M., and reaches that collection of huts nominally at six P.M. The fare is two dollars and a half, and the ordinary charge for an extra is ten dollars, but remember the stage proprietor is Kelley. The best tavern in Boiestown is kept by Avery, but about five

miles up the river, at Campbelltown, is a nice house owned by William Wilson, and the true plan is either to write to him to meet you at Fredericton, or drive over to his place. He will engage your men, aid you with the supplies, provide you with bread, besides making you generally comfortable, and you have gained so much in the ascent of the river. The stage from Boiestown runs to Chatham, and by that means you may continue to the Nipisiquit, but there is no reliance to be placed on it, and an extra from Fredericton to Chatham, one hundred and ten miles, costs thirty dollars. The stage fare is seven, and there is no telegraph to Boiestown.

One of the most interesting ways of reaching the various rivers of New Brunswick is by portaging from the head-waters of one into those of another. For instance, a steamboat leaves Fredericton semi-weekly, when the water is not too low, for the Grand Falls on the St. John; a few miles above, the Grand River debouches, from the head-waters of which a short portage of a few miles takes you into the Waungan, one of the branches of the Restigouche, or you may stop below the Falls and ascend the Tobique, a noble river, full of salmon, but which, strange to say, will not take the fly, and from Lake Nictou, the source of the Tobique, you can readily portage into Lake Nipisiquit, and by ascending the main forks of the latter, a short portage puts you on the Upsalquitch, a branch of the Restigouche, and abounding in salmon. Another confluent of the St. John, the Shiktahauk, is crossed at its head by the Royal Road, where a wagon can be had to convey your baggage to a branch of the Southwest Miramichi, and

from Newcastle, at the mouth of the latter river, you can ascend the Northwest Miramichi and strike the Nipisiquit near the Grand Falls. These are but a few of the simplest voyages that may be made, but a glance at the map, or a talk with any old Indian guide, will reveal many others.*

* Travelling in the Dominion has been much improved since the foregoing was written, and the hotels are better. The expenses of living are higher than they were, but still much cheaper than in the United States.

CHAPTER VI.

NEW BRUNSWICK.

ONE bright moonlight night in the early part of Summer, a heavy wagon, drawn by two powerful horses, was bowling along one of the dreary level roads of the province of New Brunswick. It was loaded down with trunks on the rack, barrels under the seats, that were built on springs above the sides for that purpose, and bundles and bags innumerable in the bottom, and two long leathern cases that suggested salmon rods. It carried three men; the driver, tall and spare, with a shrewd eye, and long, curly, black hair, was turned half-way round in the seat, assuming an attitude that combined comfort with facility of conversation. On the back seat, a middle aged gentleman, whose hair and beard were silvered o'er, but whose eye was bright as in his earliest youth, and a younger man of stout build with brownish hair and beard. Their talk was of the forest, and many thrilling tales of danger, or exciting ones of the chase, were told; vivid descriptions of how the moose, the caribou, the red deer, met his fate; stories of the tiger, the wild boar, the rhinoceros and unwieldy elephant; or peaceful description of killing the beautiful trout, the fierce, striped bass, or the voracious mascalonge. The time wore pleasantly away as they passed along between

the sombre lines of spruce and hemlock and juniper, as they ran into the deep shade or emerged into the open moonlight till they came in sight of the Nashwaak, seaming the dark earth like a vein of silver, when a glorious view presented itself to their attention. Far away as the eye could reach, stretched the valley of Nashwaak, silent as the repose of death; not a sound but the rattle of the wheels broke the still air, while the moon bathed the rocks, the earth, the trees, with its uncertain light, formed weird shapes out of the foliage, or cast strange shadows across the road. Still on, however, scarcely pausing—as every true sportsman must pause before the beauties of nature—the party were soon lost in the shady descent that led toward the bank of the stream, whose course they followed some miles, crossing it beyond, over a high, substantial bridge. The road then branched off, traversing the unbroken wilderness, where for miles not a habitation was visible, till midnight found them amid a heavy shower at McCloud's, the half-way house from Fredericton to Boiestown.

The horses under the shed, a sound thumping on the door brought out the host, who attended to the wants of man and beast, and sent them on their way rejoicing, as soon as the storm had abated. There was little variety in the scene; the road was mostly level and good, the forest was of the same dull character, with many dead trunks towering up amid it; there were few houses and no settlements, and the country was principally one vast plain. As the morning light began to streak the east with grey, they came in sight of the peaceful Miramichi, and turning off from the main road across the

Taxes River, followed the course of the larger stream, till, nearly opposite a beautiful spring, where they had stopped to water their horses, they turned into a barway, and in a moment more reached Wilson's, their prospective head-quarters.

Wilson's habitation was a quaint-looking log house, perched on the edge of a bank overhanging what is called the interval, or fruitful stretch of level land lying between the river and the hills, and its evident antiquity bore testimony that it had belonged to one of the earliest settlers.

A well-stocked garden, an extensive barn, a large drove of sheep and cows, suggested what an industrious and comely wife and daughter confirmed, that Wilson's was a well-to-do family.

As a general thing, the people of this region are of the most short-sighted possible character; they live for the present, and an easy way of making a dollar is irresistible, though it may entail the final loss of ten. The country is slowly going back to a savage condition; farmers, instead of attending to their farms, speculate in lumber, because it enriches one man in fifty; mortgage their farms, which are sold under foreclosures to strangers and allowed to grow up with weeds and bushes. Tens of thousands of acres are in this condition, and are being fast rendered irreclaimable. Instead of encouraging fishermen to come and spend money among them, although they admit it is about the only money they see, they annoy and overcharge at such a rate that they have driven away all but a few from Fredericton. Instead of preserving and increasing the fish, they obstruct the

channel entirely with nets, striving by one grand haul to destroy the supply forever. To this general rule Wilson is the only exception, and may be relied on, not only to do whatever in reason is required of him, but to do it at a moderate price. His only extravagant charge is for driving to Fredericton to meet his guests.

The guides were waiting for us, and after making the requisite preparations and passing a comfortable night in the old log house, we started next day on our journey toward the head-waters of the Miramichi. Our canoes were made of the log of a tree, and familiarly called dug-outs, and were admirably adapted to the purpose. Being extremely long, sometimes thirty feet, and narrow, they offer every convenience for poling, draw but little water, and are not injured by contact with a rock, that would pierce the thin bark of the delicate birch canoe, and will hold their way better against a strong rapid. They are made of the trunk of some towering branchless pine-tree that the adventurous woodsman has marked during the winter for his own, and which, after being cut down, is transported to a convenient place, where it is hewn into the shape of the outside of the boat. Augur holes are bored in the bottom, and pegs, two inches long, are driven, to answer for guides as to thickness. The inside is then roughly hewn away, till the pegs are reached, when it is smoothed off, being left two inches thick at the bottom, and a half inch at the gunwale. Slender knees are introduced at proper distances to prevent its warping under the sun; a brace is fastened across from gunwale to gunwale, near the stem and stern, and the boat is complete. It is worth about

twelve dollars, and having neither braces nor thwarts, but an open space its entire length, is convenient for holding a long rod, and being steadier under foot, offers many advantages over the birch canoe. It is particularly excellent in descending a shallow river, where occasional contact with rocks is inevitable; but is too heavy to portage comfortably. For rapid travel, either up or down stream, it is invaluable.

Our baggage was stowed, a comfortable seat made with the end of the tent upon the bottom of the canoe, our rods were rigged out for an occasional cast, and we commenced the ascent of the "Smiling Water." There had been heavy and continuous rains, and quite a freshet had now changed its ordinary placid exterior into one of angry turbulence. The river poured down fierce and wild, crested with foam and discolored with sand and decayed matter. But we made swift progress; starting five miles above Boiestown, we soon passed the last settlement, and entering among the mountains, amid which flows the upper stream, trusted ourselves alone to the dangers of the wilderness, to the mercy of the black-flies for our comfort, and to our skill as sportsmen for our support.

Ten months of close confinement in the city, years amid the horrors of civilization, had well prepared us to appreciate a return to man's natural state of savage life; long contact with vice and folly had made us eager to taste once more of truth and purity, the communion with nature uncorrupted and unsullied; to feel the air blow through the waving trees instead of down narrow streets; to hear the water rippling over its native bed,

and not through Croton pipes ; to see the sun shine from out the blue sky, instead of being reflected amid murk and smoke from heated bricks.

The spruce and fir-trees stretched in solid mass like a green wall on either side ; occasionally, a white pine loomed above them, or a birch, with its satin bark, broke the dull hue ; or where the landscape was more open, the graceful elm or willow stood forth in solitary beauty ; and the juniper, with its endless names of hackmatac, tamarack, larch or cypress, waved its weird arms aloft ; or the light, quivering poplar, with its never-resting leaves, cast an uncertain shade.

The weather had been changeable all day, occasionally bright and pleasant, the next moment dark and lowering—now the sun shining bright and warm over the hill-sides, then the rain driving in spiteful showers and veiling them in mist. The storm no sooner forced on our overcoats than the sunshine persuaded them off. Toward night, when heavier and blacker clouds obscured the sky, we determined to camp, and chose a point opposite a little tributary rivulet called Sandy Brook.

That evening and the next day were passed completing our camp equipage of tables, chairs, basins, and various little articles, and in waiting for the river to fall. During this time one of those pleasant incidents occurred that are intensely enjoyed in rough woodsman's life ; two gentlemen who had been up the river and were returning, stopped and dined with us. There was a grand discussion over flies, resulting in a mutual exchange, and a general mourning over the condition of the water, with, how

ever, the encouragement that the freshet had destroyed the nets and let the fish up to the higher grounds.

Next day we killed our first fish of the season. I had gone above the island at the head of the pool opposite our camp, and was fishing slowly down, taking occasionally a brook trout, when there came a heavier rise, a louder plash, and a fierce run that made my reel discourse sweetly. The fish had struck me in the broken water, and it was uncertain what he was till suddenly he sprang twice his length out of water, showing the silvery sides and gleaming scales of the lovely grilse; again and again he sprang in air, making the water fly as he fell back, and doing his best to break the line or shake out the hook. Bravely he fought, taking advantage of the current to run out line, and rubbing against rocks to cut it through. In vain, foiled at each attempt, his strength rapidly diminishing, he was slowly brought nearer and nearer, till a dexterous blow of the gaff finished the struggle.

Joyful at the good omen, we hastened to our camp, and were met by my companion, Dalton, who proudly exhibited a similar trophy. There was a grand supper that night, and strong hopes that the flood would abate, hopes that were destined to a cruel disappointment when next day the stream was found to be higher than ever, and heavy clouds portended a second deluge.

Our next camp was at Still Water Brook, a name that the present condition of that streamlet strongly belied. We did not, however, remain long, our sport being confined to grilse, and not many of those, and when an English officer, who had been fishing above, called to say he

had taken all the fish he wanted at a station further on, we broke up camp at once, to the great disgust of our lazy cook, who thought he had cut his "sprunghungle," or stick that supports the kettle over the fire, for the last time. We pushed on to Burnt Hill, a famous camping-ground among all those that fish the Miramichi, and there, on the open point near the rock at whose base is the deep pool where salmon lie when the water is warm, we established our sylvan home for the last time.

Burnt Hill is so named from having been burnt over, years ago, and is still a mass of dead and blackened trunks, that tower in fantastic shapes toward the sky. Next morning, having selected my choicest cariboo fly, Abraham pushed the canoe across the boiling torrent, so that I could fish near the rocky shore opposite. Having made several casts toward the bank, he swung the canoe in, and, running its nose on a rock, gave me a chance to fish the centre of the channel. I had hardly cast, when from out the curling wave rushed a mighty monster, which gleamed a moment in the sunshine and disappeared. I felt a heavy, dull strain on my rod, the fish swam deep and seemed unconscious of what had happened. Then, suddenly aroused to his danger, a magnificent salmon rushed down-stream and vaulted high out of water. Abraham glanced at me; I returned the look, but not one word was spoken. The fish returned to his former station, as though disdaining a struggle with a fragile cord and contemptible fly, and remained there some moments, heavily swimming round and round. Suddenly he became alarmed, and away he went, thirty yards at least, the line whistling through

the rings and the reel hissing with the speed. He made a splendid leap and paused.

I had just time to tell Abraham to swing his boat off the rock where she was resting, when the fish started again. Down he darted; the rod bent, the line flying through the water, and after him came the pursuers. He hesitated an instant above the worst rapids, and then sped down them; once in a while I could see him amid the foam and flying spray, as he rolled himself half out of water over some heavy wave; but my attention was occupied in keeping the line clear of rocks, and not exerting too much strain upon it. Admirably did Abraham handle the canoe. He was alone; the water seethed and boiled round us broken into a mass of fierce waves, small cascades and gleaming foam. It poured with raging current over high boulders, and swept between narrow rocks. He stood erect in the stern, his eye taking the measure of every falls, the strength of every eddy; he swung the canoe's head first one way then another, easing her down over the higher waves, that, curling against the stream, broke over the bow in mimic showers, and pushing strongly through the circling eddies. Not a rock did he touch, not a moment did the boat escape from perfect command, and when we were launched upon the quiet bosom of the deep pool at the foot of Burnt Hill Rapids, the fish was on the line. We each drew a long breath and again exchanged glances. It was a beautiful spot to kill a fish. The water, all white and raging above, formed a broad eddy, that washed the base of the rock on which I now stood. Although there was still a strong current in the centre,

an expanse of clear water spread out at our feet, into which, after each rush, the fish could be easily led, and where his mad leaps were the only risk. It was our first fish, and I exercised the utmost care; not till he was almost dead did I force him to the surface, where Abraham, with one blow of his gaff, brought our prize to land.

What a beauty she was! The small, delicate head pronounced her a female, the destined parent of myriads cut off in her prime. The brilliancy of her flashing scales gave token that not long since had she been roaming free from danger along the shores of the seacoast, and her broad back and deep chest announced her heavy weight. Glorious in her outward appearance, our keen appetites pictured to our imaginations the rich red flesh in layers, with flakes of pearly fat between, the delicate thin sides of the stomach, the depth of solidity in her broad back. Our thoughts dwelt for a moment on the fine juicy flavor her fifteen good pounds would furnish for many a meal. But above all did we recollect with pride how well both of us had done in killing the first salmon in the Miramichi.

Mr. Dalton had been watching the contest from the bank opposite, and we returned together to the camp, where libations were duly poured forth in honor of our first capture, and preparations were made for a grand entertainment.

That evening around the fire, after supper was finished, and the genial pipe was soothing as well as invigorating our minds, and after several personal adventures had been related, Duncan commenced the following history of

THE GHOST OF DEADMAN'S LANDING.

“You saw that point of land we came by the other day, where I told you a dead man was carried out from the woods? Well, I was there when he was killed. We had been logging in the woods, and doing pretty well till we tried to draw out an uncommon heavy stick of timber. Sam Masters was with us—we used to call him Swearing Sam, from a bad habit he was given to—and Sam had taken a great idea to have that stick of timber taken out before night; but the horses were tired and it was late, and after we had dragged it part of the way all but Sam proposed to leave it till to-morrow. But Sam insisted that he was not going to give up, and when we all agreed to quit, he got mad and swore he would have that timber out alone if he had to go to hell for it, and work till the day of judgment. We tried to persuade him off, but stay he would, and we left him with the horses and returned to our camp, which we had made at the landing. After supper was finished, and it began to be late, we became anxious about Sam, and when he did not arrive, at near midnight, all hands set out to look him up.

“We had not much trouble to find the horses; they felt cold and hungry, and were neighing for their supper, but were surprised to see the log rolled off the truck, and Sam gone. But the next thing we noticed was Sam's head just out from the edge of the log, that lay across his body. It was an awful sight; the moon was shining bright on his face, that was turned up toward

the sky, but all swollen and discolored, with the eyes wide open and starting out of their sockets, and his tongue sticking out of his mouth, and the blood frozen round his nostrils and the corners of his lips. He must have been dead for hours. We had a hard time to roll the log off, and then he was mashed all out of shape, so we carried him the best way we could to the shanty, and next day wrapped him in a blanket and took him down the river. His wife was all struck of a heap when she saw him, for Sam was a good husband; if he did swear more than he ought, he never swore at her."

"He would have been squelched sooner if he had," put in Dalton, *sotta voce*.

"We felt pretty bad," continued Duncan; "but after a few days had to go back and finish hauling the logs, for we had a lot cut. It was cold weather, and the wind howled through the pines till sometimes, at night, we almost thought we heard hallooing in the woods, but no one cared to go out and see. About two weeks after our return, I happened to leave my axe where I was chopping, and as snow had begun to fall pretty fast, and it might be snowed over, I went back after it. I had forgotten precisely where it was left, and lost a good deal of time looking about, all the while the snow coming harder and harder, so that the track was soon covered. That was not much matter, for I knew the country well; but it was growing dark, and the snow blinded me, so that I could not see plainly.

"You may believe I did not delay any; but after hurrying on as fast as possible for an hour or two, thought things looked strange; the trees grew thick and the

ground rough and steep, and I could not tell where I was. I searched about for some landmark, but it was almost dark, and after trying in vain, and having a heavy overcoat with me, but no matches, I was about to crawl under the roots of a dead tree and make the best of it, when I heard somebody shouting in the distance.

"There is no mistake, but I was glad, and sung out back, and clambered over the trees and stones toward the voice; but what was my surprise, on approaching, to see our own team, and one of the boys driving. They had no intention of hauling another log, and must have been foolish to think of it in that snow; but, stranger than all, when I called, did not stop or take any notice. To tell the truth, I began to feel mighty queer, especially as the driver was shaped uncommon like Sam, and I suddenly remembered that it was that night a month ago when he hauled his last stick of timber. I followed slowly along and never said a word; the driver, whoever he was, was riding on the log, and now and then his voice shouted out what sounded in the storm mighty like a curse. Suddenly the drag struck a stump, the horses made a spring, the log started, the driver tried to jump, but slipped, and the log fell on him with crushing force. There was an awful shriek in the next blast that drove a shower of snow in my eyes, and when I looked again, horses, log and man were gone. I knew well enough where I was then, and did not take long to reach the camp, when the boys hardly knew me, I was so white and dazed like."

"Let us see," said Abraham, holding his chin in a thoughtful way; "it was after that you swore off liquor?"

"Yes," said Robert. "The other boys hardly knew the liquor cask they had left in the woods next day, if I have heard right."

"You need not laugh, boys," said Duncan, solemnly; there is no fun in seeing a ghost, and I had not taken more than a few drinks. Besides, you know how, next year, when Jake, and Dick, and some others were in the same camp, they heard Sam's old chest, that we had left there, creak as though some one had sat on it, and how the shanty door was taken off the hinges and held upright in the middle of the floor. And the black dog that left no track in the snow, but used to run along the ridge pole of moonlight nights, when nobody was in the shanty; and, finally, how the roof was all taken off when Tom's party was there, and although it was covered with snow, not a drop fell inside. No, no, spirits are no laughing matters."

"Especially prime spirits," suggested the cook.

"Jamaica or Holland, but I never heard of New Brunswick spirits before," said Robert.

"Well, I can just tell you one thing," said Duncan, aroused; "there is not one of you dare sleep in that shanty alone. Come, I will pole any of you down there to-morrow that would like to try. Who will go?"

A dead silence fell on the party, for, truth to tell, though bold enough round the fire together, the dwellers on the Miramichi are a good deal given to superstition, and not one of the party but some time or other had fancied he heard Sam's ghost shouting to his team of a stormy night near the landing.

"Well," said Abraham, slowly, "I never saw but one

ghost. It was a moonlight night, with a little snow on the ground, and I was alone, crossing a cleared lot where the stumps stood pretty thick, when I noticed, crouched down behind one of them, a figure of some sort that looked like an old woman. It had no bonnet or hat, nothing but a cap on its head; it wore a long, tattered dress, that blew about in the wind, while I could just make out a pair of thin, white arms; but her face was black as a coal. It is no use to say I was not scared, for I think I was. There were some crazy people about at that time, who had escaped from the madhouse; but I was pretty sure I could outrun any of them, 'specially a woman, and I knew it was no use running from ghosts, so I concluded the best thing to do was to keep right along and pretend to take no notice; but, do my best, I could not keep my eyes off the old woman. I tried to whistle, but not a sound would come. I only blew a little, and not very steady at that. I tried to sing, but the first note I uttered made me jump ten feet; I thought it was somebody else's voice, as sure as fate. I had sidled off as far as I could on account of a gully there was, and did not like to go down that for fear she should think I was afraid. The distance between us was growing less and less, and as I watched her sharper than ever, she appeared to make one or two moves, and then stop; but all of a sudden, she jumped up, threw off her clothes, and started after me. I uttered one yell, and turned; but, as luck would have it, caught my foot in a root under the snow, and rolled headlong down the steep side of the gully.

"I do not know what I said, I think I prayed; but I

made considerable noise, anyway, and poked my head into a bush, and tried to burrow under the snow. This lasted some time; but hearing nothing more, and not finding myself killed, my courage returned; I took out my head, and slowly crawled up the bank. Peering carefully over the edge, I saw a stump where the old woman had been crouching, burnt at the top, with some snow on it; there was a dead bush and roots at the bottom, while a little further off lay a quantity of dead birch bark, waving about in the wind. 'Abe,' said I to myself, 'you have been an awful fool to take a fired stump, a little snow, and some birch bark for a ghost. Never do so again.' And I never have, and have never been so scared from that day to this."

After a hearty laugh at Abraham's fright, Robert was called upon, and responded as follows:

"I cannot tell you a ghost story, but one of as scared a man as ever was seen. It happened at this very place, too, when we were camped on this spot, and was brought to my mind by what you were reading to-day of the man hunting a grizzly bear, and leaving off because the track got too fresh. Jim Baker was with us. He had lived most of his life in the settlements, and had only just come among us, but could play the fiddle and sing a song, and must have had a good ear for music, for among the first things he did was to learn to call moose. He was uncommonly proud of the performance, and though he had never seen a moose, promised to keep the camp in meat. Well, he kept calling all the time, and sure enough one day, while we were camped here, a bull answered.

“ A good hunter might call till he was grey before he could bring a moose in broad daylight right up to the camp; but it was a fool’s luck, and sure enough we soon heard him rapping through the bushes, and then jump into the brook and begin wading down. Jim had out the gun, and started off to crawl along the edge in the bushes to meet him. We could see them both; Jim crept along as fast as he could at first, and the bull came faster yet down the stream without showing a sign of fear. Soon Jim began to go slower, and finally stopped altogether, while the moose kept right on toward him, till he was within fifty yards, when he paused and took a general survey. Jim raised the gun, but when he did so the animal seemed to have his curiosity aroused, and advanced several steps toward Jim, who lowered his gun, and backed a few paces till the moose stopped again. Jim again raised the gun, and again the moose advanced and Jim retreated. This went on till the moose became satisfied, and with a snort bounded into the bushes and was gone. When Jim came back we asked him why he did not shoot, and he said we need not think he was afraid; he intended to shoot, but did not know how the gun carried ball.”

The next day my friend killed his first salmon, and strange to say, thus we continued to the end, each catching precisely the same number of fish. The days were beautifully warm, and rather given to weeping, but fresh and bracing; whereas the nights were deliciously cool, almost too cold for Summer, and demanded plenty of warm blankets. Living in the most primitive but comfortable style, feeding off a rough table, and often cook

ing half the dinner ourselves, but with a glorious feeling of entire independence, the heavens above, the earth beneath, and all nature round us, we had a splendid time, and many fish came to our net.

Thus the pleasant days flew by; the sport ever honest, manly, invigorating and exciting, varying in luck, at times abundant in its yield, and then utterly unproductive—the uncertainty added zest; while the evenings and hot middays were enlivened with the story, joke or latest novel. Many an idle hour, when the sun shone too resplendent for the hope of sport, did we while away, the men seated or stretched at length in various picturesque attitudes, and one of us reading aloud. But the time came when this was to end, and on the eleventh day the edict was promulgated to break up camp and return.

The tent fell and was packed, the pots and pans were huddled together, our camp stores stowed, and we reëmbarked for the descent of the river. Keeping rods ready for an occasional cast, we swept along; the water was high, our men were good boatmen, the canoes were strong, and we rushed through the foaming torrent at a gallant rate.

At Rocky Bend my friend struck five fine grilse successively, and lost all but one, much to his chagrin. He laid it to the size of his hooks, alleging they were too large; but what genius will arise to explain how it is that salmon break away without any severe strain on, or damage to, the tackle. Is it a defect in the shape of the hook? If so, should it bend to one side, or curve in or out at the point? Or is it in the force of striking, or place

where the hook holds? The matter is so complex, that the most careful investigation has left me even without a theory. Some of my friends swear by one of the above plans, others by another; I have tried them all, and still the fish escape as frequently as ever.

As we approached a well-remembered spot where I had taken a fine grilse in ascending, Abraham slowly said :

“Take care as we come down to this pool, for I am like the man that once shot a bear at a cleared spot just below, and whenever afterward he came to the same place, he clambered on the highest stump, and looked around to see whether there was not another bear. Wherever we took one fish, I always expect to take another.”

I told him it was somewhat the same with me, but in that instance we were doomed to disappointment—there was no second bear.

At Sandy Pond we made our camp for the night, as my friend had never seen a fish killed with the spear, and, although admitting its unsportsmanlike character, wished to experience how it was done.

When darkness had settled down, our men kindled a flaming fire of pine knots, in an iron basket attached to a pole that projected from the bow of the canoe, and seating my friend amidships between them, pushed off. They pulled against the stream, the bright light bringing out the stones at the bottom of the water in strong relief, exposing everything within a radius of twenty feet. Behind it stood the spearsman, erect, his quick eye glancing in every direction, the firelight falling upon

his reddened visage and illuminating his many graceful attitudes. With rapid motion he swung the spear from side to side as any passing object attracted his attention, ready for the death-dealing blow. With perfect facility he kept command of the boat, shoving her bow from the rocks and guiding it through the proper channel; occasionally the spear was sent glancing through the water, and in a moment a grilse brought struggling to the surface and thrown into the bottom of the canoe, where the fire rays were reflected from his scales like the liquid gleam of the diamond.

It was a picturesque sight, the waving flame, the active spearsman, the graceful canoe, and the intense darkness around; but it was cruel and barbarous, and my friend desisted before many fish had suffered.

Next day returned us safe and sound to Wilson's hospitable log mansion, where a hearty welcome awaited us. Our extra stores were divided among the men, a farewell spoken, the team once more harnessed, and we set out to join the stage at Boiestown for Chatham, on the road to the Nipisiquit.

A strange place is Boiestown; built by an American named Boies, it is a mere collection of unpainted shanty-like houses but with Yankee shrewdness, located upon a fine stream of never-failing water, with excellent mills and water power, it might have been a thriving place had not Boies, its presiding spirit, met with reverses. The maelstrom of lumber speculation had engulfed him, and with him the prosperity of the town. There was no native capable of filling his place, and the glory of Boiestown had departed.

The stage was due at six o'clock, but at six o'clock it did not come, nor at seven, eight, nine nor ten. We told Wilson to return for us in the morning, and retired to rest in the nearest tavern, leaving word to be called when it did come.

At midnight there was a pounding at the door announcing the arrival of the conveyance that was to carry us and our baggage, two heavy trunks, seventy miles. It was a light one horse-wagon. We went to bed again, and next morning found the stage-driver still at Boiestown, having turned out his horse to graze.

Wilson, however, soon arrived, and we started on that dreary road, following the descent of the Miramichi to its mouth. There is one, and but one, pretty view in the entire seventy miles, and that is as you ascend the first mountain beyond Boiestown. Looking back, the peaceful valley that we had just left, stretching away to our camping-ground, lay basking in the sunlight. In the distance, scarcely visible among the trees, were the few houses that compose Campbelltown; nearer was the straggling village of Boiestown, and at our feet ran the placid river, leaving broad intervals upon its banks, and meandering between smiling islands. The hay was ripening in the meadow, the oats were still luxuriant in their fresh green, the bushes lined the occasional fences or marked out the narrow swamps, while here and there were dotted the majestic white pine, the towering spruce, the noble elm or the graceful willow, and a dead tree now and then stretched its ungainly limbs toward the clouds.

Beyond, however, we fell into one dull, dreary routine; civilization was behind us, the few farms once cultivated

were falling back into their savage state, the houses tumbling down, the barns in their last stages of dilapidation, everywhere windows broken out, doors off their hinges, huge cracks in roof or walls, told of general decay. The people had fled, no one knew whither; and of the few that were left, the stupidity, avarice and extortion were incredible. They impose upon and annoy travellers and fishermen till they have almost driven them away. The stages fail to run or to connect as they undertake to do. No one appears to know their times of starting or arriving. Boats advertise to leave on days when they never have left, to stop at places that are not laid down on the map, but are colloquially applied to an entire district; and omit places where they do stop. No man knows anything except his own individual business, and but little of that. The inhabitants mainly draw their support from the river, and yet are busy day and night endeavoring to ruin it; the nets from opposite shores lap over one another or reach from bank to bank, and are set week in and week out, while there is a fish running; the smallest mesh is used, small enough to capture trout or herring. The few fish that do reach the spawning beds are chased with the merciless spear without cessation till long after they are worthless as food. Yet the people think the river has improved because the laws are partially enforced at its mouth. Netters complain of the spearers, and the spearers of the netters, but neither do anything but harm. The upper stream is alive with nets, although netting should be permitted nowhere above tide water.

The only crops of the region are potatoes, oats and

hay; for nine months there is rigorous winter, and for three months cold weather. The great productions are black flies, midgets and mosquitoes. The Lord help such a people, for the people will never help themselves. Let my blessing remain with the land; I shall never return for it.

The river itself is not only lovely to contemplate but would afford to reasonable beings abundant support. In May and June the Gaspereau or alewives, a species of herring, *Alosa Tyrannus*, make their appearance in myriads, and ascend to the lakes to spawn; in June and July the beautiful sea trout appear in shoals and urge their course to the head-waters and the cool brooks; in July and August come the splendid salmon, struggling against every impediment that the wit of man, or want of wit, can place in their way, to perpetuate their species for that foolish man's support, and build their nests in the broad sandy pools. The lively, energetic grilse come last, fighting vigorously to reach their sylvan homes. Not one of all these races is taken fairly or properly, nor when his destruction will do most good and the least harm.

Having dined at Decantelon's, we reached Lynch's by dark, where we supped and passed the night, and next day, after breakfasting at Magee's, arrived at Newcastle by nine in the morning. Seeing a boy, my friend inquired:

"Boy, when does the stage leave that runs to Newcastle?"

"A'most any time; one has gone, but there will be another going in an hour or two."

"Where does it start from? We must inquire for ourselves, I see."

"Oh, anywhere round the streets; up one street and down another."

"Now that cannot be," continued my friend sternly; "it must start from some place, and we do not wish to miss it."

"Well, it will be along; it goes all around."

"It has to cross that ferry, I believe," said my friend, almost savagely.

"Yes," said the boy.

"We will wait there where it cannot miss us."

"Why, there it comes now; don't you see it on the other side of the river?"

Sure enough, there it was; and from that moment it never escaped our eye. There was a post-office near by.

"Postmaster," said my friend, "as you must know, on account of your official position, will you tell me when the Princess Royal leaves Chatham for Shediac."

"Oh, yes; every Monday and Friday. It is advertised in the paper."

"Now there is some satisfaction about this," and out came his note-book. "Every Monday and Friday—ah, yes, the paper says—— Why, the paper says Monday and Thursday!"

"Impossible! So it does; why she never sails on Thursdays. There must be some mistake."

"Somewhere no doubt," said my friend, despondingly, returning the note-book; nor was he much relieved by being afterwards informed by the stage-driver that she sailed neither Thursday nor Friday, but only Monday.

At Chatham, Mrs. Bowser received us hospitably and noisily, and there we met some good sportsmen and fine fellows. The sportsmen are the salt of New Brunswick earth; they have not a trait in common with the other inhabitants, but are jovial, friendly and open-hearted. One cannot know too many nor see too much of them. We owed them many thoughtful attentions, which we will repay to them or others of the race of fishermen, passing on the obligation.

Forty-five more miles of weary road, crossing in its course the Tabasintac, that splendid trout stream, and we reached Bathurst, where we found the guides awaiting us at the Wellington House, having received our telegram, and next day we began "life in the woods" once more.

Our camp was pitched at the Round Rocks, the lowest fishing station on the Nipisiquit, whither we drove with our luggage in a wagon, and met the canoes. Our rods were hastily put together, and in Rock Pool, at the second cast, I took a fine grilse. Others followed, and next day came the salmon. Splendid fellows just from the sea, their scales resplendent with the reflected light of their ocean homes; solid, strong and brave, leaping again and again, madly disdaining restraint, and fighting fiercely till the last. The water was strong; in some places the rapids were impassable. Sad to tell, the fish knew it, and alas, too often darted down them, whisking their tails in joy at their recovered freedom. Our sport was magnificent.

After fishing the Round Rocks and the Bush Falls, we ascended the river to the Pabineau Falls, where we

paused only to exchange friendly greetings with two fellow fishermen, and continuing through the dark, silent waters of the Bittabock, dined at the Middle Landing, where the stream pours seething in its narrow channel between high rocky banks, and where it is said to be six fathoms deep. We passed another angler at the Chain of Rocks, and reached the Grand Falls and pitched our tent on its precipitous shores by sundown.

Wild indeed is the scenery at the Grand Falls, the highest point the salmon reach. The falling water, in long ages, has worn away a channel between high bluffs, and now, in ordinary seasons, pours through a narrow gorge that once could be leaped across, but which has been blasted to admit the passage of timber. The sheet of water falls in a mass of foam some forty feet, the spray rising in volumes, and producing in the summer's sun a beautiful mist rainbow. The granite rocks have been worn in deep holes by revolving boulders, and in winter the whole chasm, filled with ice and water, must be grand and impressive in extreme.

There is a smaller, second fall, which the salmon occasionally try to leap; but they spawn in the pebbly beds below, the whole course of the stream, especially at the basin a short distance from the falls.

The principal natural fly of the Nipisiquit is about three-quarters of an inch long, has a yellow body and orange tip, two short whiskers and two long, yellow antennæ, six thick yellow legs, a large, black head, a thick yellow body with nine rings, and four reticulated, dull yellowish, transparent wings. They are not very abundant, but there are many small nocturnal flies, that will be drawn together with a light in swarms.

It is extremely interesting to stand on the rocks overhanging the river and watch the salmon, their every motion distinctly visible, and their numbers readily counted. When one is casting the fly, his companion can see the fish move to take it, and call out when to strike. Salmon seem to rise very slowly and deliberately and can be observed of a bright day together in crowds, holding their own against the current with a scarcely perceptible effort. Not one in a hundred will notice the fly; ordinarily nothing but the fins are in motion, but occasionally an individual will give a flirt and turn up his side, which flashes like silver through the water.

We fished the Camp, the Falls, the Rock and Cooper's Pools with great success; the fish were numerous, fine conditioned, large and strong. We had many a fierce contest; often was our line run out for seventy yards; the fish made splendid leaps and vigorous rushes, but we lost very few, as there was but one bad place. That was below the Falls Pool, where a stake had caught in the middle of the current; I found its locality by losing a fine grilse and a casting line.

The days wore on most pleasantly; salmon occupied all our thoughts. The first thing in the morning we looked for salmon, then we fished for salmon, then we breakfasted on salmon, and then again fished for them; then made flies to catch them, next dined on them, again fished for them, and then supped off them, and lastly dreamed of them. But the happiest and longest of summer days must end; our time came to return, and the camp was struck.

The river is quite evenly divided between the various stopping-places, and it is almost exactly three miles

between each. There are six good fishing places: the Grand Falls, Middle Landing, Bittabock, Pabineau Falls, Round Rocks and Rough Waters.

We stopped at our original camp, the Round Rocks and there we struck our last fish. My friend hooked in the middle of the current a noble specimen, that gave such splendid play that I laid down my rod to witness the contest. The bright sides of the fish, as he leaped again and again out of water, proved that he was fresh run and strong, an impression his fierce rushes confirmed. He was played with great care and delicacy; but alas! suddenly darted across the current, took a turn around a rock, and returning passed round another. All hope was given up, but when the canoe was skillfully pushed across after him, he was found to be still on and the line uninjured by the smooth rocks. My friend, greatly rejoiced, had another severe contest, and foiled two determined efforts at escape down an impassable rapid, and when compelled to follow him through some very rough water, did it in a masterly style, standing erect in the canoe, which was ably handled by the two Chamberlains, and guiding the fish through the safest channel. Nearly an hour had been expended, and the fish, almost exhausted, made one last effort to reach the next rapid, and being prevented, came alongside, feebly turning over and over. My friend unfortunately had put on a double leader and could not reel up short, so the salmon lay deep under water, dimly seen, when John attempted to gaff him. At that instant the fish turned, the gaff slipped, he made a rush into the current, and one cry from my friend, "There, he's off," told the tale. The line sprung up into the air, we looked

at one another in silence; the occasion was too sad for words. My friend sat down upon the rocks in despair; I felt for, but had no power to console him. At last, slowly and sadly, he broke the mournful silence: "Let us go home," he said; and we went.

Good bye, lovely Nipisquit, stream of the beautiful pools, the fisherman's elysium; farewell to thy merry, noisy current, thy long quiet stretches, thy high bluffs, thy wooded and thy rocky shores. Long may thy music lull the innocent angler into day dreams of happiness. Long may thy deep holes afford secure havens of safety for the salmon, where they can bid defiance to the rapacious net and murderous spear. Long may thy romantic scenery charm the eye and gladden the heart of the artist and welcome the angler to a happy sylvan home. And often may I visit thee, beautiful Nipisquit!

So much attention has been paid during the last few years to the increase and protection of salmon in Canada and New Brunswick, that the Nipisquit, which was once one of the best rivers, has fallen into a second rank; not that it has deteriorated, but because others have improved. Privileges are allowed to single rods at so much a day for the fishing, which is generally hired by the firm I have mentioned in Bathurst, but before going, the sportsman had better communicate with the Department at Ottawa, as leases are continually being changed.

CHAPTER VII.

WHITE TROUT OF THE SCOODIAC, OR ST. CROIX.

I AM unable to give a scientific description of these beautiful and delicious fish, and believe they have never been properly described. They however closely resemble a dwarfed salmon, and have been supposed to be these fish landlocked, prevented, by a natural or artificial obstruction, from completing their annual migrations to and from the sea. The better opinion, however, is that they are a distinct fish, and the color of their sides naturally suggests the above appellation, although they have no popular name. The name Scoodic is applied generally to the St. Croix River, its lakes and tributaries, and in Maine they are known as the St. Croix Trout, in New Brunswick as the Scoodic Trout, while Mr. Perley suggests that they may be the Grey Trout.

They are, however, extremely tame and numerous, take the fly readily, afford excellent sport, and delicious eating. They weigh from one pound to four, and may be taken in hundreds. The season commences about the first of June, and lasts throughout that month, and the best flies are the gay ones, composed mainly of feathers from the golden pheasant. The scarlet ibis and Irish lake flies are prime favorites.

The steamer of the International Line, from Boston or

Portland, connects at Eastport with a river boat for Calais, whence there is a railroad to Lewis' Island. From Lewis' Island it is nine miles to the fishing-ground, six of which are by water and three by land. A man named Goole will take the baggage over the portage, and the best fishing is above the Grand Falls, between the first two lakes. Inquiries must be made at the time about the necessity of carrying the canoe across the portage, as often no canoe can be obtained at the fishing-ground. Of course the angler must expect to camp out, and will provide himself accordingly.

Since the above short article was written, these fish under the name of land-locked salmon, or Winnonish of the Indians, have received much attention. Raised artificially in large numbers, they have been distributed through many waters of the United States, but do not seem to take well to their new homes. They have been domesticated at the New York State hatchery, but nowhere can they be said to furnish wild fishing, except in their original habitat, St. Croix and Sebago lakes and streams.



CHAPTER VIII.

WHITE-FISH.

Coregonus Albus—*Attihawmeg*.—Although included in the salmon family by having the second dorsal adipose, and the fin-rays soft, this fish differs totally from either the trout or salmon. It has minute velvet-like teeth, scarcely perceptible to the touch, except on the gill-arches, where there is a row of long and slim ones, like bristles; the scales are large and the body compressed like that of a shad, and it has been called the Fresh-water Shad. The mouth is very small, utterly unsuited for seizing the prey on which the trout and salmon feed; the color of the back is greyish blue, and the sides white.

Fin-rays, D. 13.0; P. 17; V. 12; A. 13; C. 19 $\frac{2}{3}$, the second dorsal being adipose.

The proper appellation for this fish is the Indian name, Attihawmeg, and if sportsmen would in all cases follow the names used by the aborigines they would show more sense than the common people of our country, who think every fish with a spiny back-fin must be a bass, and every other a trout. The Attihawmeg abounds in Lake Huron, where it attains a weight of twelve to fourteen pounds, and is tolerably abundant in Lakes Erie, Ontario and Michigan. It feeds on mussels

and shellfish, or on aquatic plants, and is usually taken in nets. The general opinion is that it will take no bait, natural or artificial; but it might be tempted by the artificial fly, or perhaps the cray-fish. It is the finest fresh-water fish of America upon the table, having no rival that approaches it in excellence except the Otsego bass. But being extremely delicate, it should be eaten immediately on leaving the water, and is never in condition in the cities. If it has been frozen, as is always the case in Winter, the Attihawmeg is utterly worthless. It is unsurpassable split and broiled, very similar in appearance and flavor, only much superior to the shad. It is not properly a game fish, whatever may be thought of its delicacy of taste and appearance, but a description of it is necessary to complete the series and to distinguish it from certain others.

To take it, however, as the Indians do in the Sault Ste. Marie, with long-handled scoop-nets, amid the roar and rush of the seething waters is no mean sport, and requires a readiness of hand, sharpness of eye, and steadiness of foot possessed by few men. Its artificial culture has been made a matter of special concern in the States bordering on the great lakes.

CHAPTER IX.

CISCO.

I RECORD a description of this fish for the purpose of calling to it the attention of those who have the requisite knowledge to determine what it is, and beg naturalists, if it is still undescribed, to leave it its own pretty, original name. It inhabits Lake Ontario, near its outlet into the St. Lawrence, and is taken in the neighborhood of Cape Vincent. It is one of the *Coregonus* group, but neither the White-fish, Attihawmeg, *Coregonus albus*, nor the Otsego Bass, *Coregonus Otsego*. It may be related to the *Coregonus clupeiformis*, although differing much from the meagre description of the latter in the accounts copied one from another, of Dr. Mitchill, Lesueur, and Dr. De Kay.

The Cisco is not so compressed nor deep as the white-fish; the teeth are more delicate and velvety, and in the gill arches are a few long, distinct, slim teeth or bristles. The mouth is smaller than that of the white-fish, and when open, perfectly square. The scales are similar to those on the latter, but the tail is so delicate as to make counting the rays mere guesswork; the point of the tongue is hard, the back colored green, the sides silver white, while the first ray of the pectoral, ventral and anal fins is darkish. The first dorsal has ten soft rays,

the second is adipose ; the pectoral has fourteen soft rays, the ventral eleven, the anal twelve, and the caudal, as well as I could count them, fourteen. It is a very beautiful and delicate fish, more so even than the white-fish.

The cisco is taken at Cape Vincent, with the eel-fly baited on a small hook and dabbled along the top of the water, and is said not to notice any artificial fly. Unfortunately had no chance to try, though I saw them rising and taking the natural fly readily. They do not rise with the rush of a salmon or trout, never springing out of water, and simply show their heads as they seize their prey. The eel-fly is a fat and sluggish fly, and it may be that the fish rising slowly, as they naturally do, would discover the deception even if an imitation eel-fly were offered to them. This fly, as I have elsewhere observed, is similar, both in appearance and habits, to the famous European May-fly.

The fish known as the lake herring, *salmo clupeiformis*, although very similar in appearance, has certain distinctive characteristics ; for instance, there are minute teeth on the tongue, and the fin-rays, as I make them, are—

D. 12 ; P. 16 ; V. 11 ; A. 11 ; C. $19\frac{5}{5}$; B. 9.

According to Lesueur—

D. 12 ; P. 16 ; V. 12 ; A. 14 ; C. $19\frac{5}{5}$.

In the lake herring I also found the first ray of the dorsal the longest, although Lesueur says it is simple and short ; the tail is deeply forked. The dorsal terminates nearly opposite the ventrals, and the second dorsal is opposite the centre of the anal.

CHAPTER X.

OTSEGO BASS.

Coregonus Otsego.—This fish must be carefully distinguished from the Oswego Bass, there being no resemblance except in the stupidity of confounding by name one of the perch family, to which the latter belongs, with one of the salmon family, to which this belongs. The Otsego Bass is closely allied to the white-fish, but has numerous dusky longitudinal lines on the sides. Its mouth and scales are small, and it appears to have no teeth except the bristles on the gill-arches. The lateral line is nearly straight, and the tail is deeply forked. The back is a rich blue, fading into green, the sides brilliant with mother of pearl, and the belly gleaming like molten silver. The rays are as follows:

Br. 9 ; D. 13 ; P. 17 ; V. 11 ; A. 11 ; C. 22.

The second back fin, as in all the salmon tribe, is adipose and rayless.

These fish have as yet only been found in Otsego Lake, where they are rapidly diminishing in size and numbers. They are not known to take any bait, and are presumed to feed on aquatic vegetation. Early in spring they seek the shallow water for a few days, when they are taken in nets; but shortly retiring to the deepest water, they remain till Autumn, when they

again seek the shores to spawn. They never exceed four pounds, and rarely two, and though undesirable on table, are not a sportsman's fish, and have been described only that they may be distinguished from other species.

The general opinion now is that the Otsego bass is the white fish, improved by purity of water. To test this, large numbers of the latter have been deposited in Otsego Lake under the direction of certain public spirited citizens.

CHAPTER XI.

THE BLUE-FISH.

Temnodon Saltator—*Scomber Plumbeus* (Mitchill)—*Horse Mackerel*—*Green-fish of Virginia*—*Skipjack of South Carolina*.

This fish belongs to the mackerel family ; it has projecting teeth in the fore part of the jaws, and velvety teeth on the roof of the mouth and tongue. The first dorsal lies in a furrow, and there are two minute spines concealed under the skin before the anal. The scales extend over the head, gill-covers and high on the fins ; the back is bluish-green, and the sides and abdomen lighter ; the pectorals, second dorsal and tail are greenish-brown, while the ventrals and anal are white, tinged with blue. The gill-cover has two indistinct flat points. The fin-rays are as follows, the spines being distinguished from the soft rays.

D. 7.1.25 ; P. 17 ; V. 1.5 ; A. 1.27 ; C. 19 $\frac{2}{2}$

These fish furnish one of the most remarkable instances of the appearance and disappearance of species on our coast. As in our day, with the Spanish mackerel, that darling of the gourmand, so in former times, the blue-fish appeared suddenly. He was first seen on the coast of Massachusetts in 1764, and then not again till 1792 ; and it is only since the year 1830 that he has been abundant.

He seems to have superseded another and larger fish of the same name, and as his numbers augment, those of the weak-fish, *otolithus regalis*, diminish. The blue-fish has singular vagaries, sometimes crowding every inlet in swarms, and then deserting us altogether, visiting in one season one locality and in the next another, but ordinarily frequenting our entire coast north to Massachusetts.

They afford excellent sport on a rod and line, being among the strongest and boldest of their kind, taking the fly readily, and making fierce and well-sustained rushes; but from the localities they usually frequent, they are mostly taken with a hand-line from a sailboat. An artificial squid of bone, ivory or lead, is trailed along at the end of forty yards of stout line, from a boat dancing merrily over the waves under the influence of a fresh mackerel breeze. The boatman's business is to watch for a shoal, which can be seen by their breaking, and when he has found it, by repeated tacks to keep the boat in or near it; the fisherman's duty is to haul in steadily and regularly immediately on feeling a bite, and to get out his line again as soon as possible. The fish dart forward, and throwing themselves out of water, turn a complete somersault, when, if the line is not taught, they will throw the hook out of their mouths. The dashing of the waves and flying of the spray, the rapid exhilarating motion of the vessel, the fresh sea-breeze, the rapid biting and fine play of the fish, make a day pass pleasantly if they do not afford scientific sport.

Blue-fish attain a weight of thirty pounds, and the largest being usually taken outside the bars, beyond the breakers, are a source of much amusement to our yachts-

men ; but the arms of the fisherman soon weary, and their hands, unless protected by leather gloves, are often seriously lacerated. The fishing can hardly be said to begin till July, and continues till late in the Autumn ; the smaller fish are taken early.

If cooked when just out of their native element, these fish are excellent, but they soon lose their flavor. They should be broiled, or split and nailed on a shingle and roasted quickly before a hot fire.

Undoubtedly they could be taken with the trolling spoon, and a stout leader of double gut running on swivel traces attached to a dark hand-line would add greatly to the success. In fact, like all other fish, at times they are shy and must be fished for with fine tackle, and then the rod and line come into play. In fishing with a rod from a sailboat, the moment a fish is struck the sheet is eased off, the boat run up into the wind, and the fish killed at leisure ; if the boat were kept in motion, the strain would be too great for the rod and reel.

One of the favorite haunts of blue-fish, although they frequent the entire length and breadth of the Great South Bay of Long Island, is Fire Island Inlet ; and there, of a bright summer day, may be seen congregated the white sails of fifty boats tossing about in the roll of the breakers, clustering together as the shoals collect, or scattering far out to sea in the hopes of better luck. There, when the wind blows, they may be seen under double reef, plunging along, throwing the spray from their bows, or, if a milder day, under full sail, generally a single one, sweeping over the quiet waters. Moderate

weather is the best, and it is no use fishing unless the fish are on, which means that their visits are variable. At midday, when they generally cease biting, the adventurous fisherman may land on Raccoon Beach, immortalized by the genial wit of J. Cypress, jr., and either cook his fish by a fire built from the waifs of the sea, which I decidedly recommend, or get a fashionable dinner from Dominy or "t'other man" that keeps a hotel there.* At this time it will be found, and I note the fact for the benefit of future generations, that a little liquor containing condensed carbonic acid gas and vulgarly called champagne, with water reduced to the temperature of freezing and commonly called ice, will be pleasing to the palate and beneficial to the inner man. In explanation of this episode, I may say I have just been there.

* Mr. Dominy has gone, but Mr. Royal Sammis keeps a large and fashionable hotel at Fire Island, which every sportsman should visit at least once in his life,

CHAPTER XII.

SNAPPING MACKEREL.

Temnodon Saltator.—One of the gayest, merriest, liveliest, little fish that chases and devours those smaller than himself, and is chased and devoured by such as are larger, is the Snapping Mackerel, the young of the previous species, but individualized from the voracity with which he snaps at the live or dead bait. He is a beautiful, silver-sided little fellow, weighing from an ounce to half a pound, and makes his appearance in immense numbers along our coast in the latter part of September or fore part of October.

“ Whence he comes,
Whither he goes,
Nobody cares
And nobody knows.”

He must have just arrived, however, from the parents' spawning ground, his diminutive size proving that he has not been long out of the shell. He roams about, at first in small numbers, but soon increasing to multitudes, and gives active chase to the minnow and spearing, that may be seen momentarily springing out of water in their frantic efforts to escape his charges. He lurks in the foaming water of a mill-tail or sluiceway, or in the eddying current of the receding tide, watching for his prey.

as they swim or are drifted along unsuspectingly. He makes one dash, a dozen startled spearing leap into the air, and swim for dear life ; but the victim is generally carried off, a dainty and epicurean meal.

Spearing invariably swim near the surface ; they haunt the gates of tide-mills when the tide is rising, and are drifted in with the current when the gates open before the advancing waters. The snappers take the opportunity, not merely to plunge among the shoals before the gates lift, but afterward, when the spearing, who are helpless in a strong current, are swept along, to pounce upon them.

Of course in such places they can be captured with most success. When they first make their appearance, not longer than your forefinger, but tender and delicate beyond belief, they may be found at low water in the rivulets of white froth that run bubbling from holes and leaks in the mill-gates. The best mode of taking them at this time, for they are small and fastidious, is with a salmon-rod and a tiny spearing on a Limerick hook ; by making casts and drawing the bait along the surface of the water and through the frothy eddies, the young innocents are deceived, and thinking to prey upon their weaker brethren, become themselves a palatable viand for larger creatures. They break like trout, without throwing themselves out of water, but with a noisy snap, and if they miss the bait at first, will follow it resolutely. It is no mean sport to stand upon the old worm-eaten, weather-stained bridge, and wield the long rod, playing your allurements over the water to the music of the rushing current and the steady clack of the mill-wheel, and

see one after another of the green-backed, silvery snappers dart from under the accumulated froth, chase and swallow your bait, and no slight satisfaction to observe the increasing number in your basket, and think of how your friends will enjoy their supper that night.

There is one singular fact to be observed, that whereas blue-fish invariably take the invitation squid, or artificial fly, with voracity, the snapping mackerel, except in the South Bay of Long Island, can rarely be tempted by it. In Long Island Sound I have failed with the fly and the spoon entirely, and have found the gutta percha minnow to work only passably, whereas in the South Bay they are taken readily with a leaden squid, of a peculiar shape, run on a large hook and polished bright.

The spearing is their favorite food, but the extreme sensitiveness of that remarkable little fish, that renders keeping him alive impossible, injures the attractiveness of the bait. As has been elsewhere observed, when small fish are used, it is desirable to keep them alive if possible, and the snappers will often give the preference to a lively killey, that by his efforts to escape incites the eagerness of their pursuit, over a dead spearing, that by his peculiar manner of resting in the water arouses their suspicions.

As the season advances, the fish are found in all rapid currents of the salt water, and the barred killey is by far the most killing bait. The best way of rigging your tackle is to have a small float and light swivel sinker, below which there is a short leader of gut. The latter is fastened to the middle of a piece of whalebone or wire about two inches long, to each end of which the hook,

dressed on gut, is attached. As the teeth of these voracious fish are sharp, and after being hooked they snap continually, the silk whipping of the hook, as well as the gut itself, is soon bitten through. Either a small quill may be slipped down over the hook before it is attached, and into this the teeth sink without damage, or care must be taken to put a couple of half hitches with the snell over the shank, as the whipping wears out.

A light rod and reel are necessary for this sport, and there is the same skill and excitement in the repeated casts that lend to striped bass fishing one of its peculiar charms. The morning hours, the last of the ebb and first of the flood, are the most propitious times; but as the Fall advances, any hour, tide or place will furnish sport in abundance.

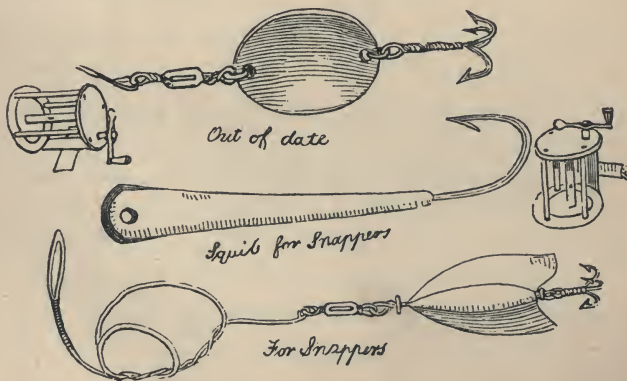
I was once fishing with a friend whose experience is greater with the pencil than the rod, on one of those glorious evenings of what might be properly styled in our country "fiery brown October," and our success made us unmindful of the fleeting hours that had bid the sun farewell and welcomed the moon from her bed. Cramped as we had been in a cockle-shell of a boat, we had taken one of the thwarts and the oars, and placing them across the gunwale, had made two high but dangerous seats. The boat was extremely unsteady, and many and solemn had been my unheeded warnings to move as little as possible, and to exercise care in whatever motions were unavoidably necessary. The fish were out in force, and seized our bait frantically the instant it touched waves, over which the moonlight glanced in tiny ripples. A northeaster had been blowing, but, dying

away, left only a long, heaving swell, that was broken by neighboring projecting rocks, and in no wise added to the steadiness of the boat. Our eagerness increased with the increasing darkness, and when unable longer to see our floats, we cast out and reeled in, finding generally a worthy reward for our pains. The fun grew fast and faster; at one particular place we were always sure of a fish. To reach it was a long cast, and my friend, in an effort to excel himself, leaned back for a vigorous throw, lost his balance, and toppled overboard. His weight, as he went on one side, careened the boat, threw me down to leeward, and let the water pour in over the gunwale in barrels. Down almost under water I saw the other gunwale turned up and nearly over me, when my friend, falling headlong out, gave the boat a lift, of which I took advantage by getting back amidships pretty well ducked, but not yet cast away. The water was nearly up to the seats, but by careful balancing, I could keep her afloat. Imagine my horror when my friend reappeared from the oozy depths to which he had descended, and commenced madly trying to clamber over the side. I begged and besought him to think of what he was doing; that I was still partially dry; that my watch was a patent lever; that I had a family of small children; and that the boat would never, in her present state, hold us both. Reluctantly he listened to reason, and allowed me to bail her out with a bucket we had provided to carry our fish. As I threw out the water I could just see with deep regret, in the moonlight, the sparkle of fish after fish that I was unavoidably throwing away, and that I hoped would have served so different a purpose.

She was finally freed of water; hats, oars and rod were picked up, the latter by means of the float that was calmly fishing all by itself; my friend, who had swam to and was shivering on a neighboring rock, was taken aboard, and we returned, solemn and sad, my friend very cold and myself greatly disgusted.

In fishing, therefore, for snappers, it is better not to fall overboard; but if, by your awkwardness of doing so, you half fill the boat, never try to climb in over the side, but sacrifice yourself bravely. We were using on this occasion a bait that, late in the season, is often more successful than any other—a part of the fish himself. This, in the early fishing, they will not touch; but in cold weather, frequently prefer.

It is a singular fact, that although blue-fish have always abounded in the Great South Bay, snapping mackerel were unknown there till lately; whereas, while the latter have been abundant in Long Island Sound from time immemorial, the former have never been taken there to any great extent.



CHAPTER XIII.

THE COMMON CARP.

Cyprinus Carpio.—This, as well as the goldfish, *Cyprinus auratus*, is not a native of our country, but has been introduced from Europe, and naturalists have supposed that there is no native carp of any size in this country. I have seen a fish called the Western Carp, which, although I had no chance to more than sketch its head, was certainly a true carp, and of four or five pounds weight. It had large scales, and all the fin-rays soft, except the first anal, which was robust.

The common carp, which has increased with amazing rapidity till it is found everywhere in the Hudson River, has a small mouth, fleshy lips without teeth, large scales, three branchial rays and teeth on the pharyngeals; has the first ray of the dorsal and anal fin serrated behind, has two barbels at the angle of the mouth, and a smaller one above on each side, small eyes, large nostrils, a high back and radiating striæ on the gill-cover. The color is a golden olive, lighter underneath.

These delicate fish, having become acclimated, and finding the Hudson River suitable to their wants, are increasing rapidly in size and numbers; but none that I have seen equal the western carp or are properly game fish.

CHAPTER XIV.

MASCALLONGE.

Esoc Estor—Masqueallongé—Muskellunge—Muscalinga—Masquinongy—Maskinonge—Muscanonga.

The sides of the body are marked with numerous rounded, distinct greyish spots. Three bands of card-like teeth are situated on the roof of the mouth, on the palatines and vomer, converging to a point toward the snout. There are long, sharp, distinct teeth along the edges of the upper and lower jaw, and continued to the extremity of the latter, although some authorities assert the contrary. The gill-arches are also covered with teeth. Mascallonge reach a length of about six feet and a weight of seventy pounds, and the comparative length of the head with the whole fish is as one to four. The fin-rays are as follows:

Branchial or gill-rays 20; Dorsal 18; Pectoral 16; Ventral 11; Anal 17; Caudal 24; according to my best computation.

Br. 18; D. 21; P. 13; V. 11; A. 21; C. 19 $\frac{7}{8}$.—*Dr. De Kay.*

D. 21; P. 14; V. 11; A. 17; C. 26.—*Dr. Mitchill.*

D. 22; P. 18; V. 13; A. 20; C. 26.—*Prof. Agassiz.*

The lateral line is not continuous, the under jaw is more elongated than that of the northern pickerel and

some fish have on their sides dark spots on a light greyish ground.

The name of this fish is derived from *Masque allongé*, long snout, which is a translation from the Canadian Indian dialect, of *Masca-nonga*, words which have the same signification; and from corruptions of these two designations arise our numerous names. I took great pains to ascertain precisely how the Canadian boatmen, who are a cross of the Indian and Frenchman, pronounced this name, although, in their French *patois*, he is ordinarily called *Brochat*, and the best my ears could make of it was *Mas-* or *Muscallung*, the latter syllable being guttural. But as the most sonorous, expressive and appropriate name is Mascallonge, it is desirable that all sportsmen should employ it.

There is a dispute as to the size and weight that these fish attain, and while some writers claim for them a fabulous size, others entirely underrate them. Mr. S. D. Johnston, the proprietor of the Walton House, at Clayton, a son of Mr. Johnston, who was a prominent man in the Canadian rebellion, and for many years forced to hide among the Thousand Isles and live by his hook and spear, said that the largest fish he ever saw was taken by his father, who, in one night, speared two Mascallonge weighing respectively sixty-three and forty-two pounds. There is plenty of authority to prove that there was taken near Clayton, in the year 1859, a mascallonge that measured five feet seven inches in length, and weighed fifty-one and three-quarter pounds, that it was poor and thin, and in good condition would probably have weighed over sixty pounds. One fisherman caught in a single year twelve

mascallonge, ranging from twenty-one to forty-four pounds. Larger fish and far greater numbers may perhaps be taken in wilder waters, and, indeed, in some of the lakes in the remote parts of Canada these fish are innumerable.

Their length, proportionally to their weight, is, in consequence of their peculiar shape, excessive; a fish of twenty-five pounds' weight will measure forty-six inches in length by six in depth, and a fish of seventy pounds it is presumed would be over six feet in length. Although this is not quite equal to the great pike of Pliny, that weighed a thousand pounds, and was drawn out by a pair of oxen, and caught on a hook attached to an ox chain, it must be regarded by the most fastidious as respectable for the present degenerate days. If the accounts we receive are reliable, the pike of Europe, of which the old song erroneously says :

“Turkeys, carps, hoppes, piccarel and beer
Came into England all in one year,”

vastly surpass ours in size, a fish being taken in a pond near Stockholm with a brass ring round his neck, having an inscription to the effect that he had been put into the pond by the hands of Frederick the Second in 1230, or 267 years before. He weighed 350 pounds, and measured fifteen feet, and his skeleton was a long time preserved at Manheim. The ring was arranged with springs so as to enlarge as he grew. The Shannon is said to have produced a pike of ninety-two pounds, and Lock Spey one of one hundred and forty-six; but, when reading of these accounts, I feel like the Yankee, who, when boasting of

his great country, and especially its great cataract, was somewhat taken aback by being told his land produced no volcanoes, nothing to equal Vesuvius or Etna, but who, after thinking a moment, replied : "That was true those were big fires, but he guessed Niagara had water enough to put them all out." So I think our mascallonge could eat up the biggest pike Europe can produce ; and it will be a pity if, when our country is as old as Europe, we cannot tell as extensive stories.*

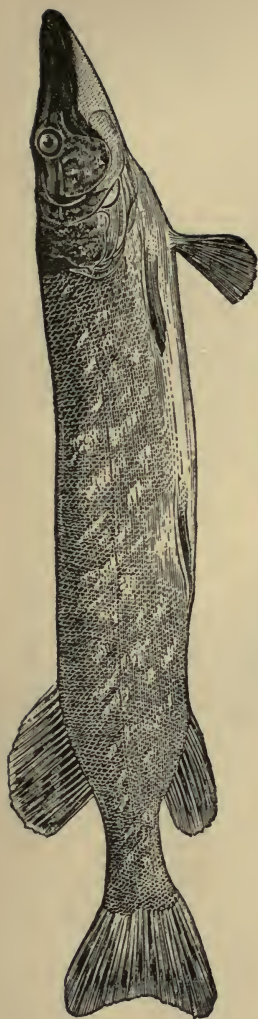
* The finer qualities of carp, the "leather" and "mirror" carp, have been introduced into America by Mr. Spencer F. Baird, the scientific and enterprising Commissioner of Fisheries of the United States, and have proved a success.

CHAPTER XV.

PICKEREL.

IN some remarkable and incomprehensible manner the good old name of Pike has fallen into disuse, and is now applied in this country to a fish that is not a pike at all, but a perch, *Lucio perca*, the Pike Perch, Big-eyed Pike, or Glass Eye of the Lakes; while the name Pickerel, which is merely the diminutive of Pike, is appropriated to the most gigantic and ferocious monsters of the deep. There is no fish whose appearance is more appalling, and whose appetite is more ravenous than the Great Northern Pickerel, which is alleged to attain a weight of twenty pounds, and which, in its fury, will pounce upon and swallow almost any small moving object. Nor does it much surpass the common pickerel of our ponds, which has very similar habits, and sometimes weighs as high as ten pounds.

The pickerel family, like most of the fish of America, have never been properly classified by the scientific, nor named by the vulgar. In fact, they, with the exception of the mascallonge, appear to have no specific names in common parlance, while naturalists have vague or no acquaintance with their peculiarities. Sportsmen and others speak of catching pickerel, whether it be in the St. Lawrence, Great Northern Pickerel, which seem to



NORTHERN PICKEREL—*Esox luciioides*.



THE PICKEREL—*Esox reticulatus*.

have had no scientific designation till named by Agassiz *Esox Lucioides*, or on Long Island, *Esox Fasciatus*, or on our principal inland waters, *Esox Reticulatus*, or in some of the lakes of the Eastern States, where a fish is caught, of which Dr. De Kay, in his "Natural History of New York," doubts the existence, and which Dr. Mitchill has dubbed the Federation Pike, *Esox Tredecemradiatus*. In truth, the distinction between the Mascallonge and the Great Northern Pickerel is scarcely visible even to the eye of science, and to the unlearned is marked only by a slight difference in the shape of the head and the coloring of the sides. The light tint is yellow in the pickerel and white in the mascallonge, while in the latter at times the sides have dark spots on a white ground instead of the dark network of the pickerel. It has even been doubted whether these fish are not identical, and the differences of size and color produced by local habits; but the views of all practical fishermen lean the other way, and they can at once distinguish the smallest mascallonge from the largest pickerel, although they are unable to point out the precise distinctive characteristics; while scientific men do make out that there is a difference in the number of the fin-rays. For the latter, however, although I have given the most careful attention that could be expected from an amateur, my enumeration differs from that of all others as they differ among themselves. My computation of the fin-rays gave—

Dorsal 18; Pectoral 16; Ventral 11; Anal 17; Caudal 24.

While according to Dr. Mitchill they were respectively,

D. 21 ; P. 14 ; V. 11 ; A. 17 ; C. 26.

And according to Dr. De Kay—

D. 21 ; P. 13 ; V. 11 ; A. 21 ; C. 19 $\frac{1}{2}$.

And according to Professor Agassiz—

D. 22 ; P. 18 ; V. 13 ; A. 20 ; C. 26.

This goes to show that either it is very difficult to count the fin-rays, or that they differ ; to the latter of which suppositions my belief inclines, as I think the older the fish the more fin-rays are formed, or so hardened as to be perceptible.

The habits of this class of fish are as similar as their appearance, and whether you capture a tiny pickerel with your fly in some shallow Long Island water, or entrap the huge mascallonge with a treble hook half concealed beneath red flannel and shining tin, they rush with the same eagerness and grasp with the same determination. I amused myself one evening on Long Island in casting over a newly-made shallow pond with my ordinary trout cast of flies, and seeing the ferocity with which pickerel, varying from four to nine inches in length, would dart upon their anticipated prey.

All pickerel inhabit sluggish water, and abound among the long, grassy pickerel weed that thrives upon a muddy bottom. The St. Lawrence, where it winds amid the beautiful Thousand Isles and forms innumerable deep and quiet bays, is their favorite home. The water, flowing from the immense lakes and holding suspended the seeds of aquatic plants, is favorable to the growth of the pickerel weed, and is in every way suitable to the fish themselves. The latter, however, have great power, and can unquestionably stem a strong current, for no

doubt they ascend the rapids of that mighty river, being found in the eddies ; but they prefer quiet water, where they can lurk among the weeds, watching stealthily for their prey, or bask near the surface in the warm summer sun. Both mascallonge and pickerel abound in the innumerable lakes of Lower Canada, and are so abundant in addition to being almost tasteless, as to be unsalable for food.

In other waters pickerel are found in the summer months among the lily-pads, often in water scarcely deep enough to cover their backs. The federation pike I have never taken, except in some of the remote ponds of the wild woods of Cape Cod, near Sandwich and Wareham, especially in the Little Herring Pond. And although at the time I had no knowledge of the scientific distinctions of fish, I at once recognized the description which I saw for the first time afterward, but had often sought in vain among our works on ichthyology. All the pickerel family are readily distinguishable by their having but one dorsal, and that opposite the anal fin and near the tail, and the sportsman acquainted with one will readily recognize all the tribe.

There are many ways of capturing this fish, and he is not the least particular if he is offered anything that has the semblance of food. He may be trolled for with dead bait, generally a minnow, or better, a yellow perch, on a gang of hooks, or fished for with a live bait and a float, and he will readily take a frog, provided the latter shall not, as described in the "Angler's Miseries," have the intelligence to creep out upon a stone and watch the fisherman, while the latter watches his float ; but the

true way in open water is to fish for him with a spoon. The last is objected to as being too destructive; but as it is clean, requires no bait, and is little trouble, and as the fish are utterly worthless either for sport or the table, the sooner they are destroyed and replaced by nobler substitutes the better.

Among the water-lilies the only mode is to use a long, stiff rod and short line, loaded with one buck-shot about a foot from the hook, and baited either with a minnow, the belly of a yellow perch, or better than all, a slip of the skin of pork cut into something resembling a small fish. The latter never wears out, and can hardly be torn off, while it often is preferred to more natural food. The bait is dropped into the opening among the lily-pads, and sinking rapidly, by the weight of the shot, toward the bottom, is started up again by a twitch of the rod, and goes bobbing up and down till the pickerel, rendered frantic by such an absurd performance, can stand it no longer, and with one furious rush determines to end the gyrations of such a silly creature. Never wait for pickerel to gorge the bait, discard such old foggy notions, and by the aid of a strong rod and line, pull him out at once. At least one-half the time fish eject the bait instead of swallowing it, and no one who has ever eaten pork can question their taste. Waiting five or ten minutes, or till they make two or three runs, will not do in our rapid country. I have seen fish that were corpulent with over-feeding, and surrounded by their favorite food, young herring, taken by a piece of themselves being spun in this manner, when they would touch no other bait.

But the most wonderful mode of all is that practised in the St. Lawrence, and generally among the larger waters of Canada and the northern States. The fisherman places himself in the stern of a light canoe-shaped boat, with his face forward, the oarsman sits near the bows, of course facing aft; on each side of the fisherman are pegs like row-locks, or grooves, in the gunwale, with corresponding round holes in the stretchers on the opposite sides; two short, stiff rods are laid across the boat, projecting on each side like wings, kept in their places by the pegs, and their butts supported by the holes. A long line is let out from each rod, say forty yards, armed with a spoon bait; while the fisherman holds an ordinary trolling-line in his hand, and is thus rowed about till either he, or more frequently his oarsman, perceives from the bending of the rod that he has a bite, or he feels a dead drag on his hand-line. 'If it falls to the share of the rod, he takes the latter up, ends it round till he can reach the line, when he pulls the fish in by hand. If he uses a reel, it is a good plan to take one or two turns of the line round it, so that it will just render. By so doing he might save the rod from breaking, which would be apt to happen with a heavy fish. Mascallonge invariably stop perfectly still when struck.

In landing a fish by hand, which is always the preferable mode, the reel only being used for an emergency, hold the line very lightly between your fingers and give to every jerk or rush. Innumerable large fish are lost by an endeavor to pull them in by force, and I have seen men, with their hands cut by the line, complaining that they had lost a mascalonge of forty pounds. Pickerel

never make many nor long-sustained rushes, but they give powerful jerks and flounces that, if resisted, will tear out or break any hook; otherwise, they can ordinarily be drawn through, or more properly over, the water like a wet rag. The person who pulls them in as though it was a question of strength between him and the fish, deserves to lose them and have his fingers cut besides. The moment, however, the fish is at the side of the skiff, he should be either gaffed or lifted over the gunwale at once, as more are lost then than at any other time. Their jaws are mere skin and bone, the skin tearing away at once, and the bone forming no substance in which the hook can imbed itself, the latter sometimes slips out or more frequently is broken off. If you value your fingers, never put them in a pickerel's mouth or gills, which are armed with innumerable sharp and even venomous teeth. The best weather for trolling is a light, southwesterly breeze, and in large and deep waters a bright sky; in a heavy wind, it is impossible to manage the boat.

The hook should always be on wire or gimp, the former preferable as the latter is so rarely what it professes to be, and of course should be attached to the line by not less than two swivels. The best spoon is the so-called Buel's patent, with three hooks, either in one piece, or soldered firmly together, and a small elliptical piece of tin, copper or brass, made to revolve round them by means of a shoulder on the shank. This may be tin on one side and red on the other, or copper and brass, or copper or brass alone, to suit the angler's fancy, and the shank of the hooks is wound with scarlet flannel, or

covered with the ibis feather, or left uncovered, as experience shall dictate. Bright spoons are preferable on dark days, and for mascallonge the oldest and most successful fishermen use no feathers or flannel. Avoid purchasing any spoon with small, dangling hooks, or with more than three or less than two, or with any fastening of any kind except wire or gimp. Nothing else will for a moment stand the terrible teeth of these ferocious monsters. I once had an expensive imitation pearl fish, that was fastened with thin brass wire, bitten off by the first pickerel that touched it. If you use a reel, you will of course use your ordinary bass line; if not, purchase a common stout hand-line, and troll with from forty to fifty yards out. Your trolling-rod must be short, stiff and strong, not over ten feet long, and can be readily made by adding a stout top to your but and second joint; while, for weed fishing, you must have a long, stiff rod, and when the fish are heavy and tangle themselves in the weeds, which their first rush will often do, you must reach your line and draw them out by hand; by taking hold of the wire or gimp, you can readily land a ten-pound fish.

These fish, both pickerel and mascallonge, can be captured in immense numbers in the St. Lawrence, at Cape Vincent, Clayton, Alexandria Bay and many other places; in Lake Champlain, near Rouse's Point; and in all the lakes of Canada; but they are dull sport in the catching and poor food in the eating. Believe no one who boasts of the fine flavor of the mascallonge, cook him as you will, he is nothing but a dirty, flabby, tasteless pickerel. And as for the sport, carry a blanket with

you, take a turn with the hand-line round your leg, and stretching yourselves as best you may in the bottom of the boat, sleep comfortably till either a call from your oarsman or a tug on your leg rouses you to the dreary work of pulling in a worthless, unresisting log. When you strike and lose one fish, remain rowing round and round; if he is not much hurt, he will bite again, and where there is one there are more; remain at that spot till, by passing over the ground once or twice without a strike, you are thoroughly satisfied you have exhausted the supply. There is sometimes great beauty of scenery, and if your guide has anything to say, which he rarely has, you can, as you should be able ever to do in the open air, enjoy yourself.

The mode of fishing among the pond lilies that I have described is much more exciting, requiring continued activity, some skill and no little judgment, while there is greater risk of losing your prey. To avoid the latter casualty, if the fish weigh not over four pounds, lift him out at once, and proceed in the same way with larger fish to the extent your rod will stand. As for snap-fishing, that is, using a hook so constructed as to spring open or shut the moment it feels the bite, and thus grasping the fish or imbedding an extra hook in his jaws, I have only tried it sufficiently to be disgusted with it, although probably it may work well in open water. If, however, it touches a weed, it will be sprung, and then you cannot catch a fish at all till it is reset. It was invented to avoid the hook's coming out of the pickerel's mouth, which, from the nature of the latter, it is apt to do, a difficulty which old, slow, poky, English punt-

fishers endeavor to remedy by allowing the pike or jack, as they call him, to gorge the bait. A pickerel, like a trout, rushes up, strikes his prey, and immediately returns with it to his haunt; he then ends it round, having generally struck it crosswise, and swallows it. This he takes much longer to do than a trout, and the English works on fishing direct you to wait five minutes or till he runs again, and then, by striking smartly, you can fix the hook into his gills or stomach, from which nothing but the knife will remove it. The disadvantage, however, is that the pickerel often eject instead of gorging the bait, and when the fisherman, having impatiently awaited his five minutes, comes to strike, he strikes naught but the thin water or the stem of a water lily. After a few such disgusting results, he will probably determine, as the writer has, to strike at once, unless, by one of those exceptional cases to all good rules, some peculiar difficulty forces him to proceed otherwise. The word spoon, that has been so frequently used, is derived from the use originally of the bowl of a pewter table-spoon, into one end of which was fastened three hooks, and into the other a swivel attached to the line, and which, by playing and flashing through the water, attracted the fish; the old-fashioned spoon is now out of use, and entirely superseded by Buel's patent. Pickerel, especially the smaller varieties, will take a fly, but not very readily; and this can hardly be said to be an established mode of fishing for them.

There is another style of pickerel fishing which is amusing, to say the least of it, and is practised extensively throughout the State of New York. You take a

small piece of flat board about nine inches across, and pass a stick through a hole bored in the centre so as to project above and below it; the lower end is then loaded, and to the upper is attached a line of some twenty or thirty feet, that is baited with either a live or dead minnow. The line is coiled on one side of the wood, and leaving sufficient end for the bait to sink to a proper depth is fastened slightly in a slit cut in the wood like the thread of a spool. As many as you please to use are then placed in the pond and left to fish while you row about or otherwise employ yourself. If a pickerel takes the bait, the line is jerked out of the cleft, and uncoiling, allows him to carry off and pouch the bait, but when he undertakes to move away he is hooked by the resistance of the wood against the water. The motion of the float can be seen from some distance, and it is quite interesting to chase one after another that go "bobbing around," as fish after fish is hooked. A plan somewhat similar to this is described by Walton and other writers, and it is merely a modification of an old invention.

The best season for pickerel fishing is after the first of September, although they are taken at all times, including their spawning seasons of February, March and April, and are quite good, voracious and abundant in July and August. The English pike is reported to show an abstinence from food in Summer that our fish never exhibit, and, indeed, differs from ours in many particulars, and none more to his credit than his scarcity. In Summer our fish resort to the shallow water, as they are also said to do in their spawning season, and at both

times they are shot or speared without mercy. In fact, the quick eye, ready hand and steady foot required for spearing renders it an exciting and reputable sport, worthy of, and often unattainable by, the best of us. In Winter, pickerel seek the warm, deep water, and are caught through a hole in the ice by a live bait on a hand line. This is said to be very exciting, provided a rude hut is built over the hole, and a fire made in the hut, and provided the fisherman, seated in a comfortable chair, provided with a book, a segar and a glass of hot punch, has an assistant to pull out the fish. It is alleged that these fish are, "during the height of the season," brilliant and beautiful; if that is so with any, except the Long Island Pickerel and the Federation Pike, the height of the season must have been too high for me to reach.

The family of the *Esocidæ* are truly typified by the voracious and terrible *Esox luceus*, wolf-fish, the true pike, from which they take their name, and include among their numbers the formidable Gar-pike, *Esox osseus* of the Southern waters. Although their flesh is hardly fit for the table, they are universally abundant, and their capture affords that kind of pleasure always derived from taking many and large animals of any description.

The principal species known in this country are :

THE MASCALLONGE, *Esox Estor*.

THE NORTHERN PICKEREL, *Esox Lucioides*, both of which inhabit the great rivers and lakes of the North.

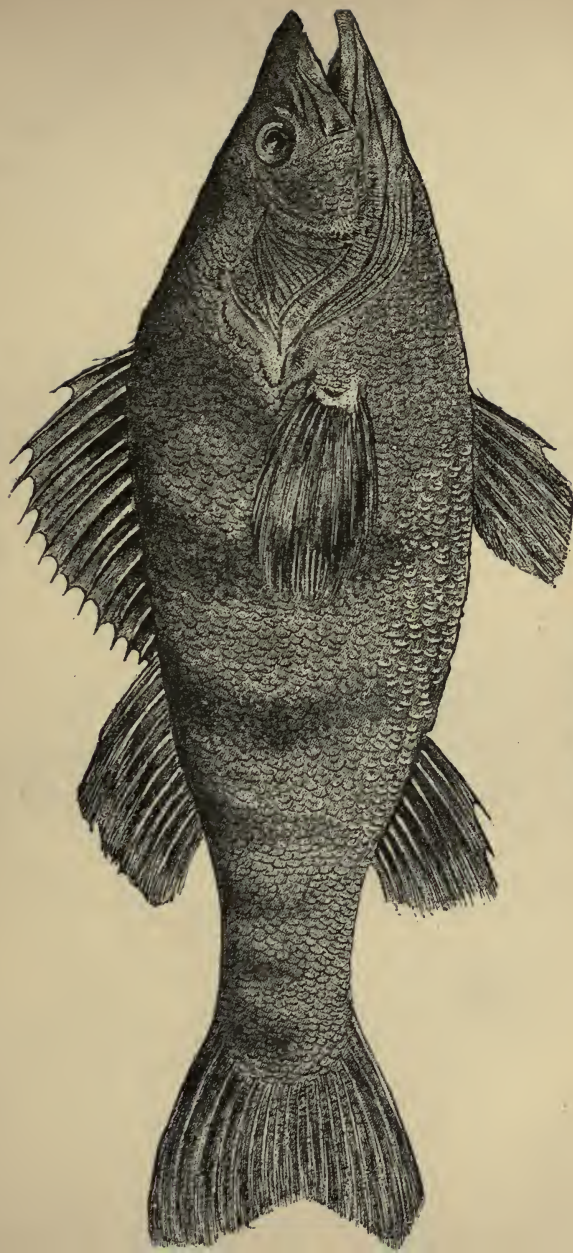
THE COMMON PICKEREL, *Esox Reticulatus*, of the middle and northern States.

THE LONG ISLAND PICKEREL, *Esox Fasciatus*.

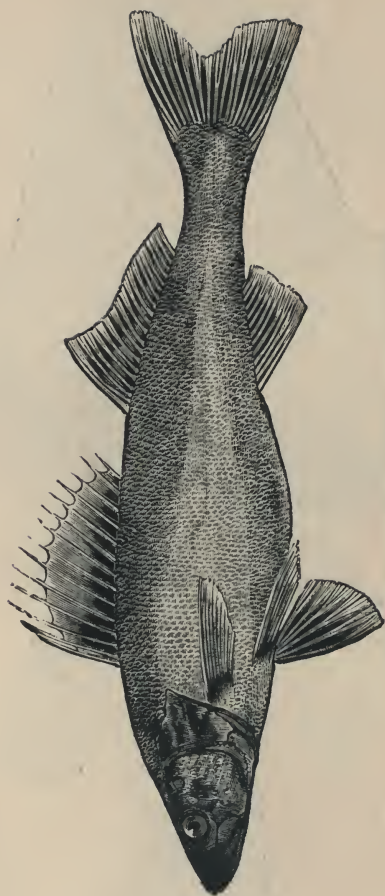
THE WHITE PICKEREL, *Esox Vittatus*, of the West.

THE BLACK PICKEREL, *Esox Niger*, of Pennsylvania and of Saratoga Lake, New York, which Dr. De Kay presumes to be only the young of the common pickerel.

THE FEDERATION PIKE, *Esox Tredecem Radiatus*, of the eastern States.



YELLOW PERCH. (*Perca flavescens*)



PIKE-PERCH—THE WALL-EYED PIKE—*Lucio perca*.

CHAPTER XVI.

THE GREAT NORTHERN PICKEREL.

Esox Lucioides.—This fish is very similar to the mascallonge, so much so that it is not mentioned in most of the works on American Ichthyology, being confounded with the latter. The principal differences in appearance are, that the snout of the pickerel, the under jaw especially, is shorter and more obtuse than that of the mascallonge, the light tint of its sides is yellower, and it never attains over twenty-five pounds. The markings on the sides are somewhat different, the light, elongated spots of the pickerel, being occasionally replaced in the mascallonge by dark spots on a greyish ground, and the fin-rays are not so numerous.

Dorsal 18; Pectoral 16; Ventral 10; Anal 15 and Caudal 24.

Or, according to Professor Agassiz—

D. 21; P. 16; V. 11; A. 16; C. 17.

The principal color is dark grey, lighter on the sides than on the back.

These fish are caught in all the sluggish waters of the North, and on the same ground and at the same time with the mascallonge, and coincide with him entirely in habits and disposition. They exhibit the same ferocity, are allured by the same baits, entrapped in the same manner, and, in a culinary point of view are, if possible, inferior.

CHAPTER XVII.

THE COMMON PICKEREL.

Esox Reticulatus.—These fish, which are sometimes called by the learned, and none others, Pike, have on their sides a network of dark lines upon a yellowish ground, and are named by naturalists from this peculiarity. The lines are sometimes longitudinal, and but little reticulated. The fin-rays are—

Dorsal 18 ; Pectoral 16 ; Ventral 10 ; Anal 14 ; Caudal 19 $\frac{7}{8}$. Or, according to Agassiz—

D. 20 ; P. 16 ; V. 10 ; A. 20 ; C. 18.

This fish rarely exceeds ten pounds in weight, although he has been said to attain fifteen ; but in these instances has probably been confounded with the Northern Pickerel. He abounds all through the northern States, and is emphatically the *Pickerel*, when the word is used without other qualification. The darker, more sluggish and weedy the water, the more he likes it ; old roots, decayed trees and a muddy bottom are his delight, and by his ferocity not a few ponds have been depopulated of superior fish. Among a certain class of fishermen he is a favorite, though utterly worthless for the table or as sport, and the little enterprise our farmers have shown has been in introducing this despicable fish into good waters, where, in consequence of his rapid increase and

voracious habits, he has soon exterminated all other varieties. Even excellent trout ponds have been treated in this way.

The largest of these fish within my range of information, are taken in Long Pond, New Jersey, a large pond, originally a natural lake, and rendered more extensive by damming. The head-waters are filled with dead trees, amid the roots of which pickerel hide and thrive. There they are said to attain ten pounds, and often exceed five. Generally, however, five is the limit, and many more are taken that weigh not over three. These fish are not found in the waters of Canada, and are usually captured with live or dead bait, or a piece of pork, although in favorable water they would undoubtedly take the spoon, like their congeners of the north. Their habits are similar to those of the northern pickerel and mascallonge.

CHAPTER XVIII.

FEDERATION PIKE.

Esox Tredecem Radiatus.—This fish, simply so called because it has no name among fishermen and sportsmen, is almost unknown to naturalists. Dr. De Kay doubts its existence, and it is described alone by Dr. Mitchill. I take, therefore, much pleasure in adding my testimony, so far as it goes, to its existence, although after all it may be merely a northern or common pickerel so altered by a change of food and water as not to be recognizable. There were a large number taken in the Little Herring Pond, on Cape Cod near Agawam, and the secret of their existence being kept for years, we had excellent sport before the natives found it out, and with their spears and guns, fishing through the ice and killing them on the spawning-beds put a termination to their existence. A few may remain, and thus determine the question. We caught large numbers, taking them of ten pounds' weight, and readily killing in a few hours a hundred and twenty-five pounds. The fish were peculiarly beautiful in appearance, so much so that I made a rough outline which is now before me, and marked in the colors for the purpose of painting the picture of one. I afterward found the undertaking difficult, on account of the dissimilarities of the common pickerel, which I purchased in

market and endeavored to use as a guide. The water of this pond was clear as crystal, and communicated with the ocean; it was alive with herring, perch and other small fish, as thick as the gold leaf in a bottle of *Eau de vie de Dantsic*, and may have had a great effect upon the coloring and shape of the fish. At the time I was struck with their appearance, and examined all the works on ichthyology at my command, but could find no satisfactory description.

The head was that of the pickerel family; of the teeth and fin-rays I remember nothing accurately; the back was dark brownish green, growing greener on the sides, where it was interspersed with numerous lilac spots or scales, and shading off, as it descended on the sides, into light green with yellow scales; then into yellow with brilliant silvery scales, terminated on the belly in the purest white. The dorsal fin and tail were dark green, the anal burnt sienna, the ventral yellow, with, I believe, the first ray red, and the pectoral yellow and reddish. The back of the head was dark green, the gill-covers were partially covered with scales, the iris was yellow shot with pearl; between the eye and the nostril there was a spot of lighter green; the snout and tip of the under jaw were dark green; adjoining on the under jaw was a warm lilac color, becoming purplish as it advanced toward the gill-cover. The lower part of the fore gill-cover was of a pearly tint, deepening into purple as it ascended; the gill-rays were a beautiful warm light mother of pearl, and behind them was a yellow tint. These colors were all exquisitely brilliant, and bid defiance to my palette. The sides were variegated with

irregular broken horizontal black lines, extending nearly to the tail, which was forked. Toward the belly these lines disappeared; and the scales of the whole body were small and numerous. The depth was unusually large in proportion to the length, made greater probably by my drawing the outline round the fish as he lay on his side. I took three outlines; but the best specimen weighed six pounds and a half, and was twenty-four and a half inches long to the centre of the tail, and twenty-three to the root, by five and a half deep, the head having a length of seven and a half inches.

These fish were not only remarkably beautiful, but were excellent on the table, and differed utterly in both particulars from all other pickerel. They were taken in Summer among the water lilies, with the belly of a yellow perch or a piece of themselves, and surrounded as they were by the most delicious food, visible to our eyes in unlimited quantities, were naturally dainty.

The above description accords wonderfully with that of Dr. Mitchill, and there can be no doubt that the fish are identical, although I did not count the fin-rays, which Dr. Mitchill gives at—

Br. 13; D. 13; P. 13; V. 9; A. 13; C. 21.

CHAPTER XIX.

THE LONG ISLAND PICKEREL.

Esox Fasciatus.—This fish has no name whatever in common parlance, and naturalists have dubbed him Varied Pickerel, Mackerel Pickerel, and other terms which are unknown except to their authors. He abounds on Long Island, although he is found elsewhere throughout the State, and probably the most appropriate name would be Banded Pickerel, as his scientific appellation justly suggests. Varied pickerel is appropriate to nothing, and mackerel pike to the *scomber esox*, another fish altogether. This fish is distinguishable by having dark vertical bands upon his sides, and being altogether of a darker hue on the back than any other pickerel, while the pectoral, ventral and anal fins are lighter colored and sometimes reddish. A dark band passes from the eye to the angle of the jaw, and the fin-rays are—

D. 22 ; P. 16 ; V. 10 ; A. 18 ; C. 18. Or, according to Dr. De Kay—

D. 15 ; P. 15 ; V. 9 ; A. 14 ; C. $19\frac{5}{5}$.

This fish never exceeds one pound in weight, and one foot in length ; and although endowed with all the ferocity of his family, does not apparently injure the trout ponds of Long Island, where he has a local habitation and a name. Probably he cannot destroy the larger fish,

and the young fry do not live where he resorts. It is not from want of will but of power that he is harmless, for he will take a small fly with the same ravenous eagerness that the mascallonge exhibits in seizing the deadly spoon. He is fat and free from bones, and not a bad pan fish, and in these particulars, as well as in habits and appearance, he sets his big brothers a good example.

CHAPTER XX.

THE THOUSAND ISLES.

AT the upper edge of the State of New York, where civilization terminates and Canada begins, a mighty river, the outlet of a hundred lakes and thousand streams, flows amid innumerable islands in a fierce current toward the sea. It bears upon its broad bosom in immense rafts the wealth of the forests of the Northwest. Enormous quantities of timber, collected from all its tributaries, even from the region around Lake Superior, are brought in large vessels, mostly three-masted schooners, to the head-waters of this stream, and there, at Cape Vincent or its neighborhood, are bound together into rafts, preparatory to descending the rapids. These rafts cover acres in extent, and sometimes have as many as fifty shanties built upon them to accommodate one hundred men for months, or until they shall reach Quebec or Montreal. Launched upon their journey, they are carried along by the current, and by sails when the wind is favorable, and even without the latter, moving as they do by the force of gravity faster than the stream, can be steered to some extent. Rough oars are fastened on the fore and after part, by a vigorous use of which the raft can be kept from danger and retained in the middle of the stream. They press on with resistless force, some-

times passing entirely over projecting rocks or small islands, and in one instance carrying off a lighthouse that had been located near their path. One end often runs far on shore, when the other swings round and drags it off; vessels of all kinds keep clear of them, if possible. They are bound together with withes made by twisting saplings, and so strongly that they rarely give way when rushing over rocks or descending rapids that are almost cataracts. Sometimes they are composed of logs, sometimes of rough staves. The latter are bound together in cribs, and instead of three drams making one crib, as is common in New York, three cribs make a dram; and the wood measure of the North may be said to be

1000 Staves make one Crib;

3 Cribs make one Dram;

20 Drams make one Raft.

And no one has any scruples whatever, for the country being poverty itself, the people are neither elevated nor moral, and eke out a scanty subsistence by rafting and fishing.

The people use for fishing, boats on the plan of a small whaleboat, built of thin cedar, and the surprise of my companions upon their first visit to this desolate region, was by no means small on discovering that they were expected to fish with three lines at once, holding one in their hand and having a rod projecting from each side of the boat in addition. We had arrived the evening before at Clayton, and, like true knights, finding there was to be a ball given by the natives, had attended it, and danced till the wee hours, with pretty little bright-eyed girls, strange dances called by Indian names, among

which the most remarkable was Moneymust. It was in the latter part of July, and the day after the ball being bright and beautiful, with a southwesterly breeze, we each selected our boatman—for only one fisherman can go in each boat—and started for a day's sport among the mas-callonge and pickerel. We separated at once, some going up-stream, others across by Powder-horn and Shot-bag Islands, while I kept down along shore and ran into the bay behind the old mill.

I had on the line of my right-hand rod a Buel's patent spoon, tin on the outside and red on the inside, brightened, by being rubbed with pumice stone, till it shone like burnished silver, and, with red ibis feathers wound round the treble hook, it glanced and sparkled through the water, visible at a great distance. On the left-hand rod the spoon was copper on the inside, and the hooks were wound with scarlet flannel, while that in my hand line had copper on the outside, brightly polished, but neither feathers nor flannel round the hooks. We passed down from the outer point of the island toward the lower part of the bay without success, but when returning inside, my right-hand rod suddenly bent, and the line slowly unwound from the reel, over which I had taken a couple of turns to prevent its rendering too rapidly; dropping the hand-line, which was made fast to the seat, I seized the rod, and turning it round and reaching my line, commenced to draw it in as lightly and delicately, but steadily as possible, just holding it between the tips of my fingers. The fish was large, and when he was about half-way in, having come thus far with no other objections than a few violent flounces, he

made a fierce rush ; instantly the line slipped with a steady but slight strain through my finers, and he dashed off for some distance, but soon tired, he allowed me to pull him up to the side of the boat ; once there, grasping the wire above the hook, I lifted him quickly over the side and threw him on the bottom, where he flounced about vigorously and with energy enough, if exhibited sooner, to have broken almost any line. Taking the hook carefully by the shank, I twisted it out of his mouth, and weighing him with the scales that were always in my pocket, found he weighed ten pounds.

Turning at the head of the little cove, we retraced our path and struck another fish, and so over and over again, some of them making violent but unavailing efforts to escape, others slapping off just as they were being lifted into the boat, others again coming in with their heads out of water like a yawl towed behind a steamboat. Sometimes it was the right-hand rod that bent, sometimes the left, then the hand-line felt the strain—often two and sometimes all three at once ; it kept me busy, to say the least of it. The reels were of little use, as the boatman had to keep rowing to prevent the lines sinking to the bottom and catching in the weeds, which, in spite of all precautions they sometimes succeeded in doing, and the strain was consequently too great for them. The bottom of the boat was filled with the long-bodied, wolfish and ravenous devils, that snapped their jaws, struggled about, their eyes gleaming with impotent fury and merciless cruelty, as ugly looking a set as the sun ever shone upon ; but as they were brought in, one after another, my oarsman was delighted.

We remained on the same spot, rowing round until satisfied we should get no more, when we headed over toward the Canadian shore, into the far-famed region of Eel Bay. The latter takes its name from a fly that is found in the fore part of July in immense numbers on the waters of this region. It appears to one who has small claims as an entomologist to be the May-fly or famous Green and Grey Drake of England. Some that I pressed and brought to the city were recognized at once by the English fly-makers, who were delighted to see an old friend, and made a number of them for me after the pattern, saying that there was but a shade of color between them and what they had so often prepared as the May-fly at home. These flies appear in myriads; when the wind is northerly, the waves will cover the dock at Cape Vincent with them several inches thick. Their body is long and so heavy that in the early morning, when their wings are damp with the dew, they cannot rise to fly and are readily picked up by their wings, which project invitingly above their backs. Eel Bay is named from the immense quantities of these flies that appear there; they constitute the principal food of the fish from which they derive their name, as well as of the cisco, black and rock bass, chubs, and probably many others. They rise with difficulty from the water, and fly heavily and slowly.

Our course carried us across the rapid current of the St. Lawrence, where my boatman was glad to have me haul in my lines, that dragged heavily, as there was no chance of taking fish. We were soon in the bay, an extensive reach formed by a bend in the St. Lawrence,

lying upon one side, out of the force of the current, and filled with innumerable islands. It probably holds within itself a thousand isles. They are of all kinds, shape, form and appearance, some half a mile in extent, constituting a cultivated farm, others a bare rock scarcely projecting above the surface, some covered with a dense foliage, others furnishing a single tree, and many bare of tree, bush or grass. There is immense variety of appearance, but all are inconceivably picturesque. None are very high, but at times the rocks run straight up like a wall of stone, while others are long, low and flat. They are clustered together, often affording barely room for the boat to pass, and offer to the eye every variety of shape and foliage. Amid them we now wandered, admiring their bewitching beauty as they lay basking in the broad sunlight upon the calm bosom of the river. Seldom are they inhabited, and most of the primeval forest trees having been cut, they have grown up with a dense underwood, occasionally relieved by some tall monarch of the forest that has survived the fury of man.

Keeping close along under the overhanging tree or rock, or passing into the open water with ever-changing scenery, we drew from the "vasty deep," where the long pickerel weed could be seen reaching up toward the surface, one after another of those savage monsters, the Great Northern Pickerel. Without catching anything of wonderful size, we had taken an unusual number, when the calls of hunger warned us that the hours were fleeting faster than we thought.

Landing at the point of an island where there was a

beautiful natural grove, we set to work to build a fire and prepare our fish for dinner. The pleasantest arrangement connected with this fishing is that each boat is provided with a basket of good cold fare, a frying-pan and the necessary means of cooking; and in the middle of the day it is customary for several to meet at an appointed island, and for the fishermen to have a jolly dinner. Although we were first to arrive, our companions were not long behind us, and the best fish, especially the black bass, were selected, cleaned, split open, and fried in the grease tried out of a few pieces of salt pork. Our provisions were combined and made quite a handsome picnic set-out, rendered more acceptable to our sharpened appetite by a few glasses of iced champagne. Of course we had our stories to tell: how skillfully we had landed this fish, or how unfortunately we had lost that; and one man, who had struck and almost landed a mascallonge, was agitated with mingled happiness and despondency. The days were long, our boatmen had had a hard tug of it, the shade was grateful, the champagne refreshing, our cigars excellent, and consequently no one was hurried. The wind, however, kept increasing, and after a couple of hours, pleasantly passed, we once more embarked and bid each other farewell till night.

My boatman struck well in toward the Canadian shore; but although we crossed places where he had had wonderful success on many a previous occasion, and of which there were extraordinary stories of mascallonge, our luck had deserted us. However, perseverance was rewarded; suddenly my hand-line was taughtened as

though it had struck a log; for a moment it was still, then I felt the motion of the fish. The boatman instantly dropped his oars and reeled in as quickly as possible the other lines—just in time; for the fish, feeling he was caught, made one rush directly toward us. I drew in the line hand over hand, to have something to give out when he should make away again, but not nearly so fast as he moved. He passed close to us; we could see the broad back, the long nose, the fierce eye, the mighty length of the mascallonge.

“Turn the boat broadside toward him,” I whispered as he passed.

Away he went, the slack of the line hissed through the water as his increasing distance took it up, and partially deadened his way as he reached the end of it and came against the light though steady strain with which I held it. Giving to him, at first readily then more sparingly, I again turned him; this time he did not approach so near, but swung round well in-shore. Then, with a sudden rush, he came straight on, and flashed directly beneath the bottom of the boat. If the line once touched the rough surface, or caught in a splinter of the wood, we knew it would part like pack-thread. The oarsman tried to swing her round; there was no time; hastily gathering a few coils, I threw them into the water at the stern, and passing the line over my head, anxiously watched them sink. Suddenly they were taken up, the line in my hand taughtened and lifted out of water; it had not caught, and that danger was past. The struggle lasted long; again and again he darted away; once he nearly exhausted my line, and compelled me to use

considerable force, but generally I held the least possible strain on him. Finally, he made one grand rush, was foiled, allowed himself to be drawn alongside, and was neatly gaffed by the boatman.

He was an immense fish, a triton even among pickerel of ten pounds. Beauty he certainly did not possess, but grandeur and ferocity marked every lineament. His huge head, immense jaws, and terrible teeth, his long, narrow body, large fins, and broad tail, and above all, his fierce, gleaming, savage eye, marked him as the undisputed master of the fresh waters. His enormous size and prodigious strength, the latter exemplified by his nearly springing over the gunwale, indicated that he had no match even in our extensive lakes, while his merciless ferocity, that would spare neither large nor small, friend nor foe, was but too apparent. His weight, as afterward ascertained, was thirty-five pounds, and his length was excessive proportionally to other fish. Although he fought well, he had not exhibited in the water the vigor he did out of it. Now that his fate was sealed, he lashed about, struggled and flounced as though his capture had just commenced, and scarcely showed an intimation of approaching death or surrender. It appears to be a peculiarity of the pickerel family that they exhibit their courage and strength too late, waiting till they are manacled before they fairly rouse themselves to the emergency. Their efforts consequently afford little pleasure to the sportsman or profit to themselves.

Having captured the master spirit of the stream, we did not wish any of his smaller brethren, and while he was dying we wound up the hand-line and removed the

spinning tackle from the others. I then took out a twelve-foot salmon leader, or casting-line, as our friends across the water express it, and fastened on it, at equal distances, five large flies, the upper dropper and tail-flies being dressed with white and ibis feathers mixed on a large sized salmon hook, while the intermediate ones were small, dark colored salmon flies. This leader, thus equipped, being fastened to one line, and a similar one, except that a small, gay spoon replaced the tail-fly, to the other, they were trolled thirty or forty yards astern, so that they sank well as we moved slowly along. Then, leaving the quiet bays, with their sluggish current and weedy bottom, we struck out boldly into the rapid water and sought the rocky shoals where black bass love to hide and wait.

The wind had increased till there was quite a sea, and it was difficult to manage the boat; but that was soon forgotten in the excitement. The fish were numerous and in excellent disposition; every shoal we crossed furnished us with several; we often took two or three at a time, and occasionally had both lines engaged at once. They were brave, vigorous and determined; madly they darted forward on feeling the hook, and threw themselves high out of water to shake it from their mouths; finding that vain, they made rush after rush to escape, again and again they leaped in the air, resolute and courageous to the last; not till they were in the net would they surrender.

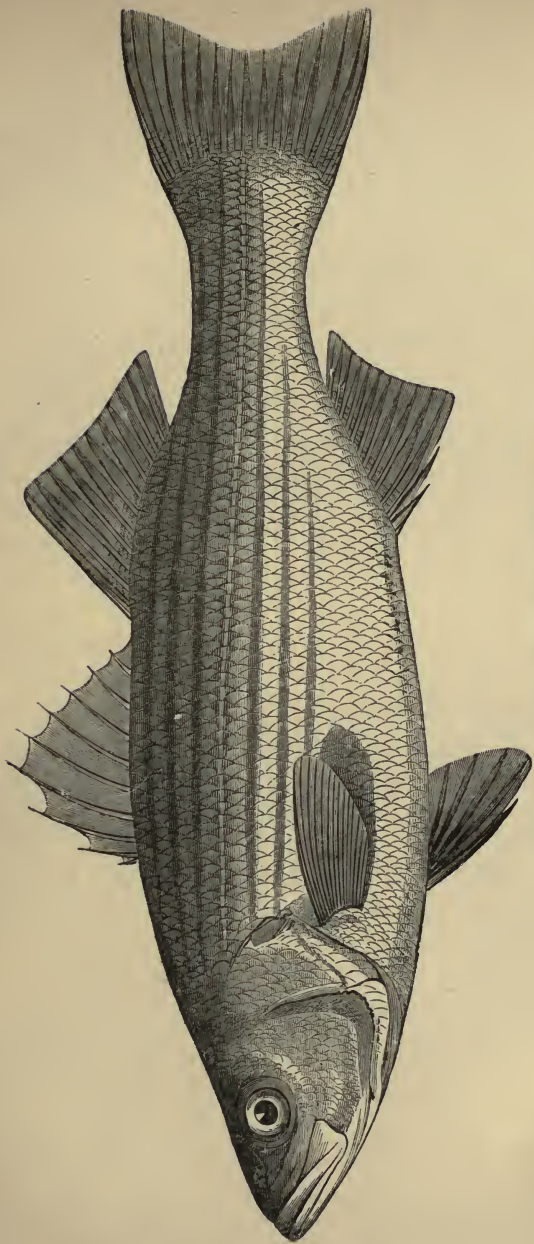
Strange it was to note the different shades of their colors. Their deep sides, for they are an awkward-looking fish, and their shape gives little indication of their

strength, were, in some, of that dark green, almost black, from which their name is derived; in others it was a light green, and again in others pale yellow. Whence these variations are derived, unless it be from the shade of the ground they live on, to which all fish are said to assimilate, is not known; but it has often led to their being divided into distinct classes, or mistaken for other species. Their peculiarity of springing out of water is remarkable. Salmon and blue-fish do so frequently, trout rarely, and other fish seldom or never; but a black bass of any size will invariably make one or more desperate leaps. It is a glorious sight to see his full length above the water, and a nervous moment till the line that has been slacked is again taughtened by his strain. Such leaps are his most effective means of escape, by enabling him to shake the hook from his mouth or strike the line with his tail; and though not so persevering as the trout, generally, at the sight of the net, he makes a final, dangerous rush.

We coasted along by island after island, crossing near one named after "Old Bill Johnston," memorable for having taken an active part in the Canadian rebellion, and long forced to hide from his English pursuers. Johnston's Island, as it is called, was his favorite resort, where he was succored and warned of danger by his beautiful daughter, universally known as the Queen of the Isles. What a theme for the poet or the novelist the father safe neither on the English shore, where he had waged unjustifiable war, nor among the Americans, who would have been compelled to surrender him, lurking among those beautiful isles, then wilder and more

densely wooded than now, trusting for his support to his rod and line—for he rarely dared to use his rifle—and to the scanty supplies brought by his daughter; the latter residing on shore watching for any expedition that might be fitted out against him, and at the first intimation darting off in her light canoe in spite of rain or storm, in the daylight or impenetrable darkness, and arriving at her retreat, perhaps just in time to warn him of his danger and enable him to escape. Imagine the woman's ready wit, ever at work, ever on the watch for him; imagine the father's joy on seeing her amid his trying and wearisome solitude, and her anxiety till he is once more out of danger. The thought that such things had really happened so near to where we then were, added to our excitement, and was only dissipated on passing Whisky Island, which is in dangerous proximity to the former.

Our boat was headed down-stream and driven before the strong wind; we moved rapidly with varying success till we arrived at one little shoal, the name of which I have forgotten, or it never existed, and where we found fish innumerable. Frequently every hook on both lines was engaged; often I landed three, sometimes four, and once or twice five fish at a time. The sport was wonderfully exciting; first one rod bent, then the other; and then, while I was busy foiling the struggles of fish so numerous that they made the water foam, I would see with a feeling of despair the other rod bend and the line slowly render round the reel. It was impossible to move faster, useless to hurry; but, as quickly as I could and dared, the fish were brought to net. This shoal was



THE STRIPED BASS—ROCK FISH—(*Labrax lineatus*.)



exposed to the full fury of the wind, and the water dashed in over the bow or broke against the side, while the oarsman had all he could manage to row against the blast.

Round and round this spot we moved, ever with the same result; the lines were not half out before they would be seized, it was almost impossible to keep the two rods in play. This lasted till we were both utterly worn out with the excitement and the exertion, and were compelled to give up from sheer exhaustion. My fingers had many a bloody mark left by the reel-handle, that a sudden rush had jerked from my grasp, and being compelled in the uncomfortable seat to turn my body round to reel up, my back was almost broken. The man had rowed as long as he could, but was forced to run down between the Powder-horn and Shot-bag Islands and rest awhile before breasting the storm homeward.

We had had great luck, taking in the last hour and a half seventy-three bass. It was a glorious sight when we arrived at home to see our fish laid out side by side, the mascallonge at their head, and tapering regularly down to a half-pound black bass. The latter do not average any great size, rarely exceeding three pounds and never known to be taken over six; but a day upon the St. Lawrence among those beautiful Thousand Isles, either in pursuit of the mighty mascallonge the furicus pickerel, or, best of all, the spirited black bass, will never be regretted by the poet or the sports man.

CHAPTER XXI.

STRIPED BASS.

Labrax Lineatus—*Rock-fish of Pennsylvania and the South*—*Perca Labrax* (Smith)—*Sciæna Lineata* (Black.)

This fish, which has a large number of scientific names and several popular ones, belongs to the Perch family, has two spines on the after part of the gill-cover, and the margin of the fore gill-cover rough like the edge of a saw. Its color is bluish on the back, light on the sides, and white on the belly. The sides are marked by seven to nine longitudinal dark lines, from which its name is derived, the upper of which reach the tail, but the lower fade out above the anal fin. These lines sometimes are broken or consist of contiguous dots. The ventral fins are below and somewhat behind the pectorals, and have the first rays spinous. The fore part of the dorsal has nine spiny rays, and at the interval between that and the after part there is another small hard ray, while the after part is composed of twelve soft rays. The pectorals have sixteen soft rays, the ventrals one hard and five soft, the anal three hard and eleven soft, and the tail seventeen soft rays.

Whether the name Bass means Perch or not, I cannot say, although there is no such tradition among my Dutch ancestry, and I am unable to find the word in

their Dutch dictionaries. There could, however, be no more creditable derivation, and as many authorities assert the fact, it is as well to let it pass. The fish are found along the coast from Maine to Florida, although they appear never to have visited Europe, and are the gamest salt water fish of our continent. In their season, which is at intervals from early Spring to late in Fall, they are taken on the bars and in every creek of our extensive coast. The net destroys the greater number, but they bite freely and fight bravely for their lives. Great skill and experience are requisite for their successful capture when they are shy and scarce, but when abundant or hungry, although always a dainty fish, they bite rapidly and boldly. Like the squid of the deep seas, these may be said to be the largest and smallest of fish; they are taken from an ounce to a hundred pounds' weight.

The Striped Bass becomes an object of the angler's attention in April, when he runs up the rivers to spawn. He ascends into cool fresh water, until arrested by a natural, or, too frequently, an artificial barrier. He is taken under the Cohoes Falls in the Mohawk, and at Albany and Troy in the Hudson, and reaches the very head-waters of the Delaware, where he is known as Rock-fish. Many, and those the largest, do not appear to leave the salt water, and are found in the small bays and inlets. In the fall, when the cold weather sets in, they retire to the salt water coves and lagoons, where they lie imbedded in the mud or hiding near the bottom, secure against danger, or discomfort from cold or storms. Advantage is taken of this peculiarity by the market fish

ermen, and there is a pond on Long Island, near Sag Harbor, and others near Point Judith, that are a source of great profit to their owners. The mill-pond at Stamford having carried away the gates one Winter, and run out nearly dry, striped bass of immense size were picked up by cart-loads from the muddy bottom.

These fish can be confined to fresh water without being permitted to visit the sea, and they will not only live and breed, but are said to be much improved by the change. In September they appear on the coast in shoals, and are taken both inside and outside of the bars, and in the bays and inlets where they resort for food. As they are much sought after and highly appreciated, and as I have added largely to my own knowledge by drawing extensively upon the experience of my friends, the following description of the numerous modes of taking them will be found rather minute.

When they first appear in April the shad are running, and hence, in the rivers that the latter frequent, shad roe is the best though most troublesome of all baits. In places where shad are not to be found, the bass are suspicious of such bait. As it is most difficult to fasten on the hook, it must be cut with the skin that envelops it, and tied on with tow, flax, or floss silk. Stonehenge, after eloquently defending the use of the salmon roe as a bait, which is ordinarily considered a kind of poaching, gives for its preparation the following directions, that apply equally well to the shad roe : Boil the roe without its envelope for twenty minutes ; bruise it in a mortar to a uniform consistency ; add to each pound an ounce of common salt and a quarter of an ounce of saltpeter ;

beat them together and store it in an earthen jar covered with a bladder. Frank Forrester recommends that the roe be well washed and thoroughly dried in the air, salted with two ounces of rock salt and a quarter of an ounce of saltpeter to a pound of spawn, dried gently and potted down, covered with melted lard or suet in earthen jars. This, either fresh or potted, is a most effective bait for striped bass, but I confess for trout my experience is to the contrary.

In streams that the shad do not frequent, striped bass are taken early in the season with shrimp threaded on longitudinally, by passing the point of the hook under the back plates; as the season advances, and crabs shed their coats, with the shedder, or better, soft crabs; and in the Fall with shrimp, the bass, or barred killey, and the spearing. In fishing with shrimp—and it is a good bait all the season through, and must be tried when others fail—use a float fastened about three feet above a swivel sinker, to the lower swivel of which are to be attached two distinct gut leaders, one of three feet, the other of two. Single gut, if large, round, and true, is decidedly preferable to double, and the hook should never be a coarse, clumsy Limerick, which has such an undeserved reputation, but a delicate Carlisle, with a broad, round bend. If very large fish are expected—and they rarely are—use No. 0; but generally No. 3 is large enough. With crab the hook must be larger. I prefer always to have the point of the hook covered, and recommend that the shrimp should be bunched on till they hide the hook entirely, and form a round, attractive bait, composed of so many shrimp as no bass ever before saw together.

In June, and throughout the Summer, the crab is a better bait ordinarily than the shrimp. I prefer the soft crab, because it does not dull the point of the hook, as will sometimes happen with a shedder that is not quite ripe; it is easily cut up into proper baits, whereas the shedder has to be skinned, or, more properly, shelled—a long and nasty operation; it is always in good order whereas others, unless carefully selected, and kept just the right time, will tear to pieces in the course of preparation; and finally, the skin of the soft crab, especially as it verges toward the buckram, enables the hook to retain its hold. Judging from human nature, I fancy the fish must prefer a nice, soft, plump bait, to one that is jagged and half full of pieces of shell.

Most writers say, fish with crab on the bottom, because there it is naturally found; I say, fish with it near the top, because no sensible fish can imagine that a quarter of a crab long since dead and dismembered has any control over its own motions. In fact there is no unbending rule for fishing; the only way is to try all plans, and if the fish will not notice your crab suspended in mid-water, take off your float and swivel sinker, put on a running sinker, as it is called, made like a piece of lead pipe with a small hole in the centre, tie a knot in the line to prevent its going down on the hook; use a single bait of a good-sized piece of crab, and cast well out from you, and the first eel that comes along will astonish, not to say disgust you. The line being free, though the lead lies on the bottom, you can feel the first touch of a fish, and strike at once; whereas if the sinker were the old-fashioned deep sea lead he would have to drag its weight some distance before the fisher-

man would be aware of his proceedings. A man, by fishing on the bottom, although justified by a philosophy which establishes the fact that bass ought to look for crabs there, and not dangling about in mid-water, will surely catch three eels to one bass. The truth is, crabs are not found on the bottom in such places, generally strong foaming currents, which they never frequent unless carried away by the force of the water, and soft crabs are by their natural enemies, and many other causes, often torn into pieces and borne about by the tide.

The bait should be kept in continual motion: this is the first law of all bait fishing. It is done by twitching the rod, and induces the fish to seize the prey, which they imagine is about to escape. I have seen them time and again dart at a bait when in motion, that they had smelt round contemptuously when still. Crab is universally regarded as the preëminent bass bait in Summer, although its reputation is disputed by that wonderful production of the sea, the squid. This horrible monster, of which sailors tell such astounding stories, has illuminated the tales of olden time, and been a pet forecastle yarn with ancient and modern mariners. There are accounts of ships seized by its arms, that reached to the mast-heads, and sunk or only saved by prayers to the Virgin Mary and the vigorous use of axes on its many muscular and boneless limbs; of grateful mariners presenting pictures of the dreadful encounter to the shrine of Our Lady; of huge pieces of the arms of this fish, indicating that they must have been sixty or more feet long, found in the maw of the whale, whose food they are; and hor-

rible stories whispered with bated breath, of men in bathing drawn down by even the smaller of the monsters. Though there must be something in it, I doubt if this is all true, notwithstanding the squid is ugly enough for anything. With us the squid or cuttle-fish is harmless except to the sight, and in his native element is glad to hide himself in the obscurity of a dark liquid that he has the power of emitting, when pursued. The only bone in his body is in the middle of his stomach, and what it is put there for unless to give him an accurate idea of indigestion, no one knows. For the present it is enough to say he is good bait, although not handsome, and may be used either in trolling or still fishing.

Another excellent bait early in the Fall, although nowhere mentioned in the books, and, I believe, my own discovery, is the scallop. My attention was first called to it by some men opening them for the table and throwing the many-eyed skins into the water. The bass collected at once and rushed eagerly to the very dock, almost springing out of water to seize the coveted morsel. Upon this hint I acted, and by great care, for the scallop is extremely tender, and by passing the hook several times through the skin, I succeeded in keeping the bait on while I cast very gently. My success was astonishing, and then and afterward I took the largest fish under the most unfavorable circumstances with it, when they would not touch the most tempting crab. The heart of the scallop is pearly white, and is attractive and so good that no wonder the bass should be crazy for it. It is difficult to manage and easily washed off the hook, but if any fisherman shall see bass, as I have often, lying

in a deep pool, occasionally leaping out or sluggishly showing their back fins on the surface and refusing all allurements, let him try scollops, and he will think of me in his dying hour.

As the days grow colder and the crab reassumes his impenetrable coat and dangerous pincers, shrimp again come into play, and on many occasions the belly of the white soft clam will attract the bass even earlier in the season. But in August I have had excellent sport casting, if I may use the word, for him with the spearing. Early in Summer a delicate little fish an inch or two long, pearly white and semi-transparent, with a black eye and a white band along the lateral line, makes its appearance on the shores of Long Island Sound and elsewhere, and has come to be called the spearing. It is a beautiful fish, and properly dressed might rival in delicacy the far-famed English white-bait; but it is never brought to market till later in the season, when it has grown several inches long and is comparatively tasteless. Being too small in the early summer to take a hook, they are difficult to catch; but an excellent net, both for them and killey-fish, can be made of mosquito netting stretched double between two hoop-poles, with a stout cord run along the top and bottom to receive the leads and floats respectively. The netting being of extra width, can be doubled together with the lead line laid in the bag, or, as sailors would say of a rope, in the bight, and the leads being small pipe, fastened at short intervals, will keep the net close to the bottom—an important particular. It should be five to six yards long; and two men, taking each a handle, can sweep a considerable part

of the shore, and often fill a pail with minnows or spearing at one haul.

The killey-fish, so called by our ancestors from being caught in the kills or creeks, and which, by the by, are at least of three kinds without counting sticklebacks, will rush about and try to creep under the net; but spearing, which always go in shoals, when once in the net do not seem to be able to escape, and will stay there as long as it is kept in motion. No fisherman living near the water should be without this contrivance, as nothing is so annoying as to be unable to get bait; he will soon acquire considerable skill in its use, and if he is as boyish as a fisherman ought always, though grey-headed, to be, he will experience much excitement in the pursuit even of his bait. If spearing cannot be had, though that is rare, the barred killey, vulgarly called the bass killey, is the next in beauty and attractiveness; it is the *Fundulus fasciatus*, or striped killey-fish of De Kay, and if it cannot be had, the ugly green killey-fish, *Fundulus viridescens*, may be used, but with doubtful success.

To cast with spearing in the manner here suggested successfully, a stout long salmon rod will be requisite. A small hook is run through the spearing's mouth and out at his side, for he is long since dead, and a cast is made into the foaming torrent of a mill-tail or rushing tide. The bait is drawn irregularly over the surface of the water, and again cast and played like the fly. The bass strike it as trout or salmon take the latter, and there is the same skill and uncertainty in the pursuit.

I was once fishing in this manner for snapping mack-

erel, the young of the blue-fish, *Temnodon saltator*, with single gut half worn through, and the lightest tackle. I had been quite successful, much to the disgust of older men who were fishing in the usual manner with live killey and no luck, and finally made a cast right among a number of their floats. Suddenly, from the turbid depths, shot a huge bass, gleamed for a moment in the sunlight, and disappeared beneath the surface carrying my spearing in his mouth. It was a splendid fish, and my skill was tried to the utmost; many a run I was forced to give to, and only the great length of line I had on the reel saved him; after a good half hour's excellent sport I brought him to the net, and my companions were still more disgusted at their want of luck. I again made a few casts, catching several snappers, when another bass, full as large as the first, struck me and was landed after an equally spirited contest. This was early in September, and before the fish were taken by trolling in that neighborhood.

In June and October, bass of great size are captured off Point Judith with half a mossbunker, otherwise menhaden, hard-head or bony-fish, the *Alosa menhaden*, thrown from the rocks by rod or hand into the surf. The bait is ordinarily tied on the hook, which is large, and thrown without float or sinker as far into the sea as its weight will enable the fisherman to cast, and then slowly reeled or drawn in. Similar fishing is pursued at Newport, and bass are frequently taken of over forty pounds.

A favorite mode of catching these fish is by trolling from a boat either with rod and line or hand-line and with the natural squid, or the imitation made of pewter,

tin or bone. In this mode very large fish were once taken at Hell Gate, but the glory thereof has departed. Where squid cannot be obtained, the large spearing or barred killey will answer well.

There is this redeeming quality about taking striped bass with the float and sinker, that the fishing generally being done in a rapid, and at times, boisterous current, the bait has to be kept in motion, and it is necessary to reel in and cast out every few minutes. As great skill in casting can be obtained, and there is an immense advantage in throwing into the exact spot, it is truly a sportsmanlike mode of procedure. A good fisherman can cast thirty to forty yards, or even more, into the size of a hat, without tangling the line or jerking the bait, while the tyro will generally fail reaching half the distance, and will frequently leave his baits on the way. I can cast better and further from the left side, and have heard many old fishermen say the same, but you must be able to use the rod on either side.

As there are persons so ignorant as not to know how to cast at all, and as I once found one stopping his reel with his first finger, I will say that to make a cast the line is reeled up till the float touches the tip, or in case no float is used, till the bait is within a foot of it, the right hand grasps the rod at the reel, which is turned up, and the thumb placed upon it to regulate the escape of the line; the left hand is near the butt; the point of the rod is then carried back behind the fisherman, and with a steady, springy motion is suddenly brought forward and the line delivered. A jerk, or the fouling of the line, which will surely happen if it is allowed to overrun, will

certainly tear off your baits, and perhaps your float and sinker; the sinker must strike the water in advance of the float, or the leader is apt to hitch round the upper point of the latter.

The most scientific and truly sportsmanlike mode of taking striped bass must be admitted to be with the fly; which, unfortunately, can only be done in the brackish or fresh water. Like salmon, they will not take the fly in the salt creeks and bays, and thus, though the sport is excellent, it is confined to few localities, and those difficult of access. Fly-fishing may be done either with the ordinary salmon rod, or in a strong current with the common bass rod, by working your fly on the top of the water and giving a considerable length of line. The best fly is that with the scarlet ibis and white feathers mixed, the same as used for black bass; but bass may be taken with any large fly, especially those of gay color. Excellent sport is frequently had in this way from off some open bridge, where the falling tide, mixed with the fresh water, rushes furiously between the piers.

It is generally conceded that the best time for bass fishing is at night, especially if the moon be bright. The most favorable wind is a southwesterly one, strong enough to make a good ripple on the water, and the right time of tide from half-ebb to half-flood. In the shallower inlets the neap tides are preferable, as they do not drain the water so low as to alarm the fish.

In bass fishing, whether for trolling or casting, the rod should be eight to ten feet long, stiff and light, but with a certain amount of elasticity. A rod made of a piece of bamboo, cut in two joints, will, until some awkward

friend steps on and breaks it, answer as well as any other, and one that costs three dollars is in every particular as good as one worth forty. The light bamboo jointed rods of our ancestors are no more to be had; the makers say it is impossible to get the cane of the proper taper, and rods of ash and hickory have come into fashion. The latter will answer every purpose, but as they are sure to warp, the guides should be double, so that the line can be shifted from one side to the other. Patent standing guides are all the fashion with us, though the English use the old-fashioned rings made large. Of course we prefer our own invention. The funnel-top should be large, and for a valuable rod, or a particular gentleman, should be made of agate. They are infinitely superior to the old-fashioned ring-top still used in England. Avoid having many guides; they create friction, and three or four will answer every purpose.

If you are a gentleman and a man of fortune, of lavish hand and open heart, you should use what is called a grass or raw silk line, buying a new one every two weeks, by which time it will be rotted out. It does not kink or over-run, works beautifully, and will enable you to cast ten yards further than with any other; but it is not strong at best, will rot immediately if not dried after the least exposure, and costs money. If you are a poor or a careless man, buy a new flax line every year, and throw it away in the Fall, after being disgusted with it all the season. If you are neither of these, buy a plaited silk line of one hundred yards; be sure and get a new one, and take care of it.

Lines may be preserved from rotting by being dipped

in a mixture made of one pound of printer's varnish, half a pound of siccity, and one gill of spirits of turpentine, warmed up together, or in the ordinary drying oil sold at the paint shops, and although they do not render quite so easy, I have all mine, trout and bass lines, so prepared. I cannot take the trouble to dry my lines after every exposure, and if once forgotten, without being so protected, they are ruined. A well-made silk line is strong enough to hang oneself by, if the angler should be disgusted with life by his ill luck, and coated in this manner they will last a long time. They do not get saturated or take up water in casting, and do not stick to the rod as they otherwise would. Lines for fly fishing, prepared in a similar manner, are sold in the fishing-tackle stores, although the makers are opposed to an improvement that will diminish their business. The line is dipped in the preparation when warm, and left in all night; it is removed next morning after the mixture has been rewarmed, and is stretched in a garret or other place not exposed to the sun or rain, and the superfluous varnish wiped off, and after it is thoroughly dried, it is well rubbed. This preparation cannot be used with linen or cotton lines, as it will rot them.

In striking a bass you cannot be too quick, and when fishing with a float your line will sink in the water and enable you to trip the float and fix the hook at once. The fish must then be kept well in hand; but never exhibit severity unless compelled by circumstances; be rough, and the fish will be rough; be gentle, and he will come to you like a friend. Keep him from the rocks and bottom if possible; but give to his willful rushes till he

is content to listen to reason. By this course you will avoid feeling often that sinking of the heart that follows when the strain suddenly ceases on your line, and you know he has escaped.*

That fine game fish of the southern States usually called bass or red-fish, belongs to another family, and is the *Corvina ocellata*, or branded corvina. It is distinguished by a peculiar black spot, like a drop of ink, near the tail. It furnishes noble sport and excellent eating, abounds in the neighborhood of the Chesapeake Bay, and is highly prized at southern tables.

* Prepared lines are sold now at all the fishing-tackle shops, and linen lines are made so fine, beautiful, and strong, that for bass-fishing nothing better is needed. For surf-fishing use a nine-thread line.

CHAPTER XXII.

BLACK BASS.

Gristes Nigricans (Agassiz)—*Centrarchus Fasciatus* (De Kay).

This fish has innumerable scientific names, while it can scarcely be said to have any distinctive popular one. Bass, either alone or with some additional appellation, is applied by common usage to almost the entire perch family, one of the largest among the American fishes, while scientific men are at as great a loss for appropriate nomenclature or accurate distinctions. There are probably several species classed under the same name as this fish, and itself differs greatly in color and appearance, according to its food, water or locality. There is no doubt that all fish, and more especially trout, change their hues according to the color of the water they inhabit, or even to the light or shade of their favorite haunts. It is supposed that they assimilate to the bottom where they are found, a provision of nature to protect them from their enemies of the air. Unquestionably the same species present a very different appearance in clear, limpid streams, and in muddy, sluggish brooks. Black Bass are said to possess of themselves the power to change their color at will, and have been known to do so repeatedly when confined in a vessel of water. They are found to

have black, green and yellow sides, according to circumstances, and often within a short distance of one another, though their backs are generally dusky black.

The gill-cover has two flat points, the teeth are minute, while the back fin, though single, is partly divided into two. It contains ten hard and fourteen soft rays; the pectoral has eighteen soft rays, the ventral six, the first one almost spinous, the anal three spines, the first very short, and twelve soft rays, and the tail sixteen soft rays. This fish has been confounded with the Lake Huron Black Bass, *Huro nigricans*, which is now supposed to be a different variety, characterized by two longitudinal lines or stripes running the entire length of its body.

The gill-rays are six and the fin-rays, as given by Dr. De Kay, are as follows, but I think liable to considerable variation.

D. 9.1.14; P. 18; V. 5; A. 3.12; C. 16 $\frac{2}{3}$.

Black Bass, belonging as they do to the perch family, have many of the habits and can be captured in the same manner as their congeners. But, as they are infinitely superior in flavor, they are equally so in game and sporting qualities. They will take minnows, shiners, grasshoppers, frogs, worms, or almost anything else that can be called a bait, and like all fish, prefer the live to the dead. They may be fished for with good stout tackle, gut leaders, a reel, and an ordinary bass rod, in the same manner as fish are generally captured by boys and blockheads. In June they affect the grassy bottom in water fifteen to twenty feet deep, but as the season advances they resort to the rocky shoals and rapid currents, where they are taken on and after the middle of

July by sportsmen with the fly. They may be captured by casting the fly as for salmon or trout, and this is by far the most sportsmanlike way, but the most destructive and usually resorted to is trolling. For casting, a two-handed seventeen foot salmon rod is preferable, while for trolling, a short bass rod is the thing. By anchoring your boat to the windward of a shoal, or by walking out on some point of rocks, you can command a great extent of water with your fly-rod, and have royal sport alone, whereas for trolling an oarsman is indispensable.

The flies to be used are the ordinary small-sized salmon flies, not too gaudy, though the first dropper and tail fly may be larger and made of white and ibis feathers mixed. In casting you will use your ordinary cast, but in trolling you may attach five or six flies to a long salmon leader at equal distances, and will frequently take several fish at a time. My experience has convinced me that a number of flies attract fish, whether trout or bass, and the more you can conveniently use the greater will be your success.

Black bass abound in the northern waters, where they are invariably trolled for with two rods, one on each side of the boat, in the same manner as in taking pickerel, but two rods are a great additional trouble, for when a fish strikes one the other has to be reeled up by your boatman, lest the hooks sink to the bottom. If the boat is kept in motion, it is almost impossible to reel in a large bass, and would make a labor of a pleasure, even if he should be eventually captured.

A small trolling spoon is excellent bait, probably preferable to the fly at all seasons except the middle of

July, when the eel-fly, the principal food of the bass, is just disappearing, and the artificial fly is then a luxury. In case a spoon is used, the shank of the hook is usually wound with ibis feathers, and a Buel's patent is the favorite. It has been recommended at times to fasten a forked piece of pickerel tongue on the bend of your fly-hook, but like a similar direction as to a worm on a trout fly-hook, I have no faith in it. Another successful bait that has, in my opinion, more reputation than value, is the *kill-devil*, a creature that is beyond my powers of description, and must be seen to be appreciated.

The hours and days favorable for fishing are, in the main, similar for all fish ; if the water is deep or turbid there may be an exception, but generally a southwesterly wind, a cloudy sky, and the morning and evening hours, will yield the best sport. This is so for black bass, and the more wind the better, until it becomes difficult to row and manage the boat. In the western wilds, where deer are plentiful, an attractive fly is made by tying a white and red tuft of deer's hair along the shank of the hook ; the thread being passed round the middle of the tuft, allows the upper part of the hairs to be bent back by the motion through the water, giving an appearance of life to the bait.

An ingenious mode of proceeding is suggested in Brown's Angler's Guide, that is worthy of young American genius, to which it is attributed. A boy having caught a sun-fish, runs his hook through its nose and out at its mouth, covering the point with a lively worm. Other sun-fish, seeing their fellow have all to himself a fine, fat worm which he seems unable to master, collect

round him, and by their numbers attract the bass, who dash in among them, and while the rest make off, swallows the one with the worm, and of course himself falls a prey to the ingenious young fisherman. This, like the use of cray-fish, mice, swallows, and many other baits, may be excellent, but I have never tried it or them; so long as the fish will take a fly, I fish with nothing else; it is infinitely more exciting to kill one fish on the fly than ten with bait.

Black bass are taken among the Thousand Isles in immense numbers, but not of any great size, rarely exceeding three pounds. In Lake Champlain, near Rouse's Point, and in the lakes of Canada, they grow larger. The largest, probably, never exceeding eight pounds. They are taken in most of the waters of the northern and northwestern States, especially in the Niagara and Detroit rivers, Lake St. Clair, Lake Erie and Lake Huron. They make their appearance from deep water in May and June, grow to great excellence in July and August, but are in their best condition in September and October. They are a fine, noble game fish, and where trout are not to be had are well worthy of the sportsman's attention; when captured, which can only be done by skill and care, they prove an excellent addition to the table.

The fish usually known as trout at the South, albeit that name is applied to many varieties, is a species of black bass, and is taken by trolling with a red and short line before the boat as it is rowed along.

CHAPTER XXIII.

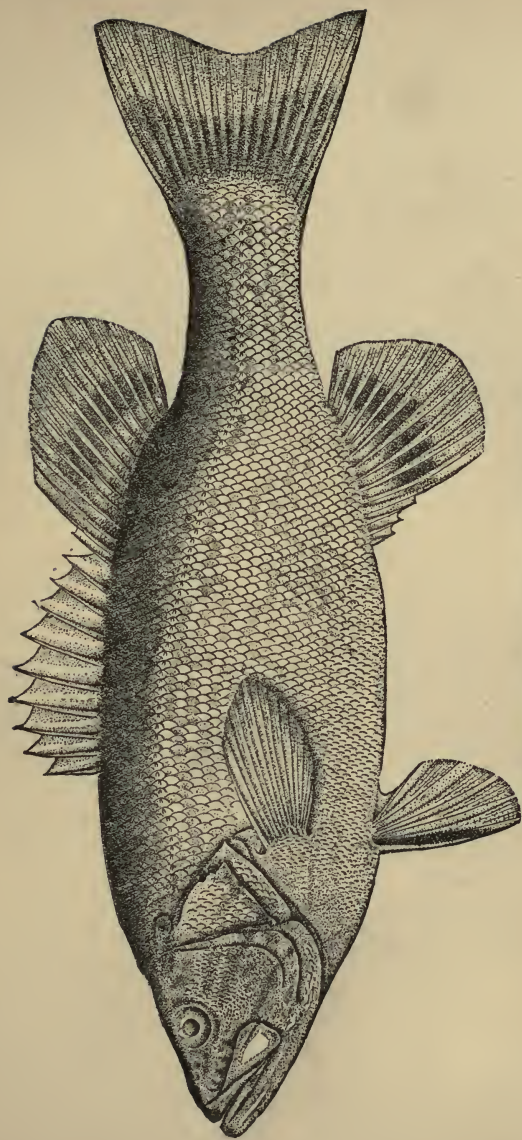
ROCK BASS.

Centrarchus Aeneus.—This is an entirely distinct species from the Black Bass, though, being somewhat similar in color and shape, is often confounded with them. The same may be said of the Oswego Bass, which is now ascertained to be equally distinct, though commonly known as bass, and supposed to be identical. The fish under consideration must in no wise be confounded with the Rock-fish of Pennsylvania, which is the Striped Bass, *Labrax lineatus*, and which the benighted Pennsylvanians would oblige us by calling by its right name.

The Rock Bass has two flat points at the angle of the gill-cover, and is distinguished from the variety last described by six or seven spines and eleven soft rays in the anal fin. The dorsal has eleven spines, and ten or twelve soft rays; the pectoral fourteen soft rays, the ventral one spine and five soft rays, and the gill-rays are six. The fin-rays are given by Dr. De Kay as follows:

D. 11.12; P. 14; V. 1.5; A. 6.11; C. 17 $\frac{3}{4}$.

This fish is found in much the same waters as the black bass, and, like the latter, made its way on the completion of the Champlain canal through it into the Hudson River. It takes any of the ordinary baits, preferring, however, the cray-fish, *Astacus Bartonii*, and can be



SMALL-MOUTHED BLACK BASS (*Grystes nigricans*.)

captured even with the fly, but not readily. In the St. Lawrence River it feeds mostly on the eel-fly, so long as that lasts, choosing, I believe, the dead ones; and in July I have found them filled with that fly. They never attain the size of the larger black bass, although they are taken of over three pounds, but are a brave, voracious fish, and excellent at table.*

* It is now generally accepted as the scientific conclusion that the Oswego bass, the Southern black-bass—there called the chub—and the big-mouthed bass, are one and the same. I know, however, that the Southern black-bass, the *Grystes salmoides*, is a much finer fish on the hook and on the table than his supposed compeer, the Oswego bass, and takes the fly as freely and fiercely as the true black-bass. The latter is now generally called the Small-mouthed bass, that being his distinguishing peculiarity.

CHAPTER XXIV.

THE PIKE PERCH.

Lucioperca Americana.—This fish is mentioned more on account of the absurd misnomers that have been applied to it, to warn persons against similar errors, than on account of its sporting qualities. There appears to be some confusion among naturalists concerning this family; there is probably an undescribed species. Dr. De Kay mentions a bluish fish which he regarded not as a distinct variety, but as an aged specimen. By a close comparison of the two, I am satisfied that although the scientific peculiarities are wonderfully alike, there are substantial differences.

The Pike Perch is called the Glass-eye, the Big-eyed Pike, the Pickerel, Pickering, and Pike of the Lakes; whereas a simple suggestion will establish the difference between it and the pikes or pickerel. The latter has all the fin-rays soft, and the ventrals in the centre of the abdomen, whereas this fish, which is a true perch, has many spinous rays, and the ventrals close beneath and just behind the pectorals.

The Pike Perch is of an olive color on the back, yellowish on the sides, and white beneath. It attains a weight of thirty pounds, and is distinguished particularly by the peculiarity of having the membrane attached to

the last two rays of the first dorsal jet black, whereas that attached to the other rays is yellow. The lower edge of the gill-cover has been described as smooth, but I find the fore part of it slightly serrated; the posterior part has one flat spine, beyond which there is a pointed membrane, and above a rudimentary spine. There is a series of sharp teeth on both jaws and the gill-arches, two in the front of each jaw being long and conspicuous. The base of the tongue is roughened but toothless, and I can find no teeth on the vomer. The scales are not large, and have the edges marked out by a series of dots.

The fins, as I make them, are—

Br. 7; D. 13.2.20; P. 10; V. 1.5; A. 1.14; C. $17\frac{3}{8}$.

But according to Dr. De Kay they are—

Br. 7; D. 13.1.21; P. 15; V. 1.5; A. 1.14; C. $17\frac{3}{8}$.

The color of the anal is reddish yellow; of the ventrals light yellow, and pectorals yellowish olive. There are scales on the gill-covers; those on the fore gill-cover being scattered and few. Beyond these differences my examination found the ordinary pike of the lakes to accord with the description of Dr. De Kay; but the other species that I have mentioned was very different both in color and appearance, and is, as I conceive, the true Ohio salmon, a name that has been applied to the species just described.

As for the color in the latter species, that was totally different, being so far like the salmon as to have no doubt given origin to the name. It is bluish grey on the back, greyer on the sides, and white on the abdomen. The only part of membrane of the dorsal of the salmon that is black is that attached to the last spine alone of

the first dorsal. The shape of the fore gill-cover is slightly different, and the spines on its edge are more distinct and regular, like teeth. There are no bars on any fin except the dorsal; there are no scales on the gill-cover, and the fins are all light and transparent. There are minute teeth on the base of the tongue.

The fish that this description is taken from were found in New York market on the 25th day of February, and may have been altered by their winter dress; but they were unknown to the fish-dealers, one of whom called my attention to them and inquired their name. They did not weigh over a pound, and the largest was fifteen inches long, of which the head was four. Of the dorsal, the second, third and fourth rays were the longest. Being but a sportsman, I mention these matters to attract the attention of the learned, who would do us a favor if they would seek out the old Indian names to apply to our anonymous fish.

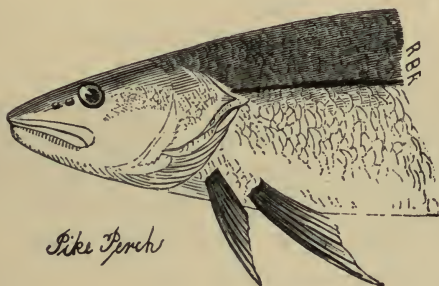
There is a third described species of *lucioperca* or pike perch, as the word means; *lucioperca grisea*, that is found in the limits of New York, as well as the *lucioperca canadensis*, which belongs to Canada.

It is to be observed that Dr. De Kay puts the length of the *lucioperca americana* at 14.5, but says they are occasionally much larger; whereas the fish known as the pike of the lakes is taken in immense quantities in Lake Ontario, in April, of twenty pounds' weight, and rarely falls below five. There is a small pike perch known as the sorga, with the same general characteristics, but with the membrane attached to the last spine-ray of the first dorsal alone black. The back is yellow mottled with

black, and shaded down the sides to white on the abdomen; the first dorsal is yellow with dusky spots; the second dorsal and tail yellow with dusky bars; the gill-cover is scaled and the fore gill-cover partly scaled. It is precisely the shape of what I call the Ohio salmon but of a totally different color. Its length is about twelve inches, and its weight does not exceed a pound. The fin-rays are—

Br. 7; D. 12.1.18; P. 12; V. 5; A. 1.11; C. 17 $\frac{1}{2}$.

There are unquestionably at least three distinct varieties, besides the grey and the Canadian pike perch; they are popularly known as the pike the sorga, and the Ohio salmon, and all are highly esteemed for the table.



CHAPTER XXV.

THE YELLOW PERCH.

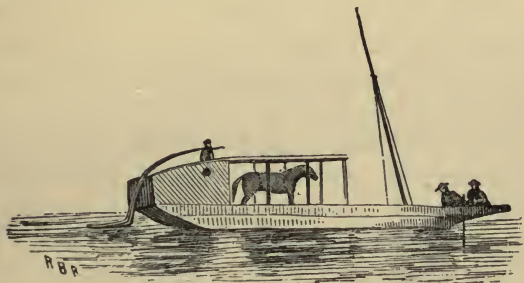
Perca Flavescens.—The Yellow Perch has, as his name indicates, a predominant yellow color on his sides; there are a number of dark vertical bars over the back, and the pectorals, ventrals and anal are orange. The gill-cover is serrated beneath and armed with a long spine, and the fore gill-cover has a toothed margin. There are two dorsals; the ventrals are beneath and slightly behind the pectorals, and the teeth are minute. The greatest weight is four or five pounds. The fin-rays are as follows—

D. 13.2.15; V. 1.5; A. 2.8; C. 17 $\frac{5}{5}$.

Unfortunately, this fish, equally despised by the gourmand and the sportsman, abounds in our fine ponds and lakes, that ought to be devoted to his noble congener, the black bass. He will take the fly if it is allowed to rest in the water, and after hooking a trout that had fouled in the weeds, I have found a perch on the second fly. He spawns in April or May, seeking the sandy shore, near projecting roots, where there is a depth of a foot of water. I have seen them crowded together, male and female, jostling and following one another round and round through the roots, pressing out milt and spawn, and so busily engaged that they could

be taken with the net or the hand. In mere wantonness and desire to diminish their numbers I destroyed all I could, hanging them on strings with the spawn streaming from them. The eggs, which were almost transparent, were in the water in masses, kept together by a glutinous substance, and each marked with a black spot, and could be taken up in the net, straining slowly through the meshes.

Yellow perch will take worm or minnow, preferring the former, and it is probable destroy numbers of young trout. Their flesh is coarse, white and tasteless. They are pursued only by boys and ladies.



CHAPTER XXVI.

PROPAGATION OF FISH.

THERE is no subject more important to the material welfare of our country, or that a persistent and willful disregard of the laws of nature has rendered more necessary, than the culture of the various tribes of fish that were once abundant in our rivers and lakes and along our coasts, but which are rapidly diminishing, and threaten soon to become extinct.

Fortunately great strides have been made and great interest aroused in this matter, and the only article in the first edition of this work which the author has felt himself called upon to seriously modify, is that upon this subject. Then there was not a Fishery Commission in a single State of the Union, nor was there a skilled fish culturist in the land, except perhaps Dr. Garlick, who was making experiments out West, and Mr. Seth Green, who was studying out the spawning habits of fish by himself, by the side of the forest streams, and laying in stores of knowledge which were to serve as a foundation for the great fish-cultural fame that he has since acquired. The author may claim that his former few pages of advice and instruction may have tended in a measure to bring about the change, and to give to us State Fishery Commissions in a great majority of the States, and a National Com-

mission that] has no equal for scientific attainments or practical work in the world. For the creation of the latter, the author also claims not merely the influence of his writings, but his assistance as a member of Congress in getting the law passed which established the United States Fishery Commission, and placed it under the charge of so efficient a public officer as Mr. Spencer F. Baird.

At that time there was hardly a word written on the subject in this country except a pamphlet by Dr. Garlick, and such translations from the French as described the operations under Prof. Coste, and accounts of a few limited English experiments. Not a private establishment for the cultivation and sale of fish on any considerable scale existed, and no expectation that any large public benefits would ever arise from fish propagation, was generally felt. Since that time hundreds of books have been written in this country alone, the time of scientific men has been devoted to it, fish cultural societies have been formed, and there are several successful establishments for the hatching and sale of young fish. In no development of this wonderful country has there been so remarkable an advance, such a change from darkness to light, such an elevation of public opinion, as in this matter of the artificial increase of fish.

The limits of this work will not permit a minute and detailed description of all the details of fish culture. For an exhaustive treatise on that subject, the reader is referred to a book called "Fish-Hatching and Fish-Catching," which contains in a practical form all that was known up to the time it was written. But general rules are given in this chapter which will enable the novice, the farmer, the gentleman country resident and happy owner of a

trout stream, to largely increase his revenue and his pleasure by recruiting his preserves and making waste waters, if not to blossom as roses, to produce a yield of food for the table and sport for the rod.

We shall turn first our attention to trout and salmon culture, which are so nearly identical that they may be studied together. There are at present no natural salmon rivers in this country except in Maine, Oregon and California, the efforts to restock the Merrimac and the Connecticut having only achieved partial success. It is the present opinion of the writer that salmon were never regular visitors of the Hudson River, or that if they were indigenous to it, it was only in very limited numbers. This opinion was formed from a study of the waters which are not well adapted to the propagation of that class of fishes. Further south than New York, salmon were probably never known to go at all.

Under the head of Salmon, may be included the salmon, the trout, the salmon-trout, otherwise called lake-trout, the whitefish, the grayling, the fresh-water herring or cisco, and California brook-trout, and the California salmon. The scientific names of these are, *salmo salar*, *salmo fontinalis*, *salmo confinis*, *salmo amethystus*, *coregonus albus*, *thymallus signifer*, and *salmo quinnat*. These are all essentially alike in their mode of culture, the differences being so inconsiderable that they may be disregarded for the present. We shall speak of one for the whole, only occasionally pointing out such individualities as may be necessary.

They spawn in the autumn and winter, with the exception of the California salmon, which is earlier, and spawns in summer and first of autumn; the grayling, a fish of the

same race, which has lately been found to exist in our country, and which spawns in March, and the California brook-trout which spawns in March and April.

The salmon come in from the sea where they have passed the cold weather, as soon as the ice breaks up, and keep on all summer long running up into the fresh water ; which alone is adapted to the fructification of their eggs. Trout, in like manner, pass from the ponds and deep lakes into the cooler streams, where a constant supply of fresh and lively water can be obtained ; whitefish appear from the depths of the great lakes and seeking the shallows along shore, select gravelly and rocky reefs and springy spots to lay their eggs.

Salmon and trout make nests, the female digging out the bottom and fanning away with her fins and tail the mud and finer sand from the gravel which she afterward uses to cover her eggs. When these operations are sufficiently advanced, she is joined by the male and they simultaneously, with one mutual impulse of amatory passion, deposit the eggs of the female and milt of the male. Only a certain number of these are extruded at a single impulse, and are then carefully covered over with gravel by the female, while the male divides his time between driving away intruders of his own sex, who would usurp his prerogatives and devouring such stray eggs as may have escaped the notice of his wife and been carried down stream by the current. One noticeable peculiarity of the spawn of this class of fish is, that the moment it falls from the parent, it adheres to whatever it touches. This is a provision of nature to enable the parent to cover it over with gravel before it is washed away, which she does with remarkable skill and care, moving the stones

with her ventral fins and tail for that purpose. It remains fast for the space of thirty minutes or so, and then becomes loose and is swept away by the current, a dainty morsel for whatever bird or fish or insect that comes across it. It is also to be observed that the eggs are heavy and sink to the bottom like shot; a marked peculiarity of the spawn of the *salmonidae*, and distinguishing them from those of other varieties.

Several different deposits of spawn are made and covered up in this way, till often quite a mound of fish eggs and gravel is erected. Such mounds built by the famous trout of Rangeley and her sister lakes are large enough to fill a two-bushel basket. The operation of emitting the eggs is not all done at one time or on one day, it occupies several days. As soon as the nest is completed, and the father and mother are exhausted of spawn and milt, they drop back worn out and weakly to the deeper water or the ocean to recuperate. The eggs are left to themselves unprotected, except for their gravelly covering.

The enemies of fish life are numerous. The most to be dreaded are eels, which are difficult to exclude from the troughs, and devour eggs and young with equal voracity. Seven young trout have been taken from the stomach of an eel six inches long and no thicker than a fine knitting needle; they grow as they eat, hiding most cunningly in the sand or gravel from human eye, and making their way through narrow passages and small holes that a person would not suspect them of being able to enter. One half-grown eel will destroy an unlimited number of fry or eggs. Ducks are equally destructive, thrusting their long bills down into the nests of spawn, or seizing and swallowing the young; frogs, mice, rats, fish, many

birds, and the larvæ of beetles and devil's darning needles, and other water flies before they have developed into the perfect insects do their share of damage. A very large percentage fail to become impregnated, the current of water probably washing away the milt of the male before the sperms could enter the eggs. Mr. Livingston Stone says that in digging some spawn of the California salmon, deposited by the parents in the natural manner, in the McCloud River, he found only eight per cent. vitalized.

For almost thirty days after birth the salmon or trout eats nothing, but is sustained by the absorption of the stomach or what is more accurately termed the umbilical sac. All this while, as may be readily understood, he is awkward and hampered in his movements, an easy prey to any hungry enemy. Appreciating his position he strives to hide himself during this period; he crawls into holes and under stones, and often hides so effectually that when he has been artificially hatched his anxious foster father, the breeder, never discovers what has become of him, unless his breeding troughs are well made and free from worm holes. But in this, his hour of weakness, his enemies never desert him, they stand by him from first to last. At that stage of his development every miserable shiner, dace and minnow is his master, a very Giant Despair by comparison with his feebleness.

If he outlives all these perils and attains a marketable size, man steps in. Man takes the best and so upsets the equipoise of nature, which up to that time had by its checks and balances kept all varieties of living creatures at an established relative proportion. For every salmon he eats there are ten thousand fewer eggs for the water

bugs and the minnows who will make up the loss out of those which are left. These embodiments of evil must be fed and grow more diligent in the search for food, the scarcer it becomes; still man keeps on with net, and spear, and hook, making yearly larger drafts as the human race increases and extending his machinery as the prey diminishes; so the whole system of nature is disarranged. The edible fishes at first diminish, then, as the process goes on in geometrical ratio they decrease more rapidly, and the operation becomes accelerated at every step, till the stream or lake which once abounded with excellent fish is utterly and absolutely denuded and left sterile, bare and unproductive. The insects have devoured the last edible fish which man's greediness has failed to reach. This has happened with so many of the ponds and water courses of our country that it is safe to say, fully one-half of the lakes, rivers and streams throughout the older States, at least, yield nothing of food for man.

Such a result is no trivial injury to the community. The vast extent of these stretches of water are but little understood by the people at large. There are in the State of New York alone six hundred and forty-seven lakes, with an area of four hundred and sixty-six thousand four hundred and fifty-seven acres, besides countless smaller ponds, and miles of river and stream. Fully a quarter of a million of acres of the public patrimony are thus allowed to go to ruin and decay for the want of proper knowledge and a little care. It would have been easy to have protected them; it is a far more serious matter to restore their ancient productiveness.

Trout are found in all rivers in which salmon can hatch their young, but as they are not necessarily migratory,

they often dwell where salmon cannot. Trout require a temperature of water never exceeding seventy degrees. At sixty-eight degrees they begin to suffer; at seventy degrees, unless there is a strong and broken current to give life to the water, they die rapidly, and not one will survive a temperature of seventy-five degrees. It is simply manifest then that the Southern and Western rivers are not generally inhabitable for trout or salmon. Trout may be found in the head waters of such as rise in the Alleghany range of mountains, but salmon can exist in none of them. So also with the sluggish, muddy rivers of Ohio, Indiana, Illinois, Missouri and the vast central region of our continent. Throughout the entire section between the Alleghanies and Lake Superior and the Northern Mississippi, except in Northern Michigan, no trout are found, and then again not till you come to the Rocky Mountains. Trout and salmon, except in the matter of migration, are similar in their habits. The eggs of either may be hatched in the same boxes, with the same water, in about the same time, and under the same treatment.

When we speak of the temperature of a pond or river, allowance must be made for springs to which fish will have recourse, precisely as men perishing in a room for air, would put their mouths to a knot hole to breathe. If there are springs enough, trout will live in waters the body of which reaches a higher temperature than seventy-five. So also, a strong rush of water as with a cataract or rapids, will enable them to endure greater heat than they could otherwise stand. Still it is not safe to subject any of the eastern salmon or trout family to a permanent temperature higher than sixty-five degrees. Salmon

trout suffer most and die the first, at least when they are confined in a limited space with a small flow of water.

The first point in fish culture is to obtain the spawning fish in proper condition, for if the eggs are not mature or ripe, as it is usually called, not only are they useless, but the effort to extract them will kill the parent. Fish breeders, who make the cultivation of trout a business, and there are many in this country, keep on hand in suitable ponds a supply of large fish. These are taken from the rivers, which they are ascending to spawn, and are kept over from year to year. Connected with the ponds in which they are confined, is a raceway, or long narrow trough which has a gravelled bottom, is covered with boards to exclude intrusive eyes, and in every way is made as attractive a nesting spot to the fish as possible. Into this they will proceed of themselves when they are ready to perform their allotted act of reproduction, and the breeder awaiting his opportunity, places a net at the mouth of the race and frightening them in, selects such as are ready for manipulation.

When in a perfectly ripe condition, the eggs lie free in the ovaries in the abdomen, and may be extruded by a gentle pressure downward along the sides of the fish. They are caught in a basin and are vitalized by coming in contact with the milt from the males, for the fish, male and female, are stripped indiscriminately into one common receptacle. Formerly, the practice obtained of having this basin full of water, under the idea that such arrangement more nearly reproduced the natural conditions, but subsequent discoveries led to a change of this method. The ova are fertilized by the spermatozoa of the milt entering through the micropyle, and it was ascertained that these

spermatozoa, little tadpoles as they appear to be under the microscope, were not fond of water, and although very active when first emitted, soon perished in it. They retained their vitality much longer when dropped among the ova in a comparatively dry state, and this is the method universally pursued at present. The result of the change was very great; on the earlier plan not more than one egg in three or four was vitalized, whereas now, fully ninety-eight per cent. are made capable of producing young.

In selecting a place for trout hatching, it is essential to have one where the water is at an even low temperature, near to the springs if possible, and where there is absolute security from muddy drainage or overflow from rains. The shape of ponds is not important, if the water is abundant and cold enough.

It is best, if possible, to have ponds so arranged that they can be entirely drained. This is necessary, sometimes, for cleaning or repairing them, and changing the fish from one pond to another. If the slope of the ground is sufficient to permit of such an arrangement, it will often save much labor in pumping or bailing. The drain pipe may be of pump logs, tile or pipe of any kind, and should be fixed in the lowest part of the bottom, or as near it as the level of the ground will allow. Still better would be a regular flume reaching from the bottom of the pond to the top. A bulkhead may be put in to raise the water as high as may be required, and a wire screen the whole size of the flume set a short distance in front of the bulkhead. This large screen has an additional advantage, as the larger the screen the less liable it is to clog up with leaves and moss, and the greater will be the volume of water passing through it.

Screens may be made of common wire painted with tar, or of galvanized iron wire. The last is the best, as it will last longest in proportion to its cost. The screens for keeping the small fry should be of fourteen threads to the inch, and for one year old fish five or six threads to the inch. Incline the screens at an angle of forty-five degrees, the top being farthest down stream. By inclining the screens in this manner, a greater surface is exposed to the water, than if they were placed perpendicularly. The sockets should be so made that the screens will fit tightly, and yet be easily taken out to clean.

A very good screen for two and three-year-olds can be made from strips of lath, planed, and nailed to a strong frame, with quarter-inch openings between them. Or, what is better, the slats should be at least four inches wide, so that if a leaf strikes against them, it will catch without obstructing the flow of water and lie flat against a single slat, or, if it reaches over the edge, it will be carried through by the current striking upon one end. It cannot lap around the slat as it would if it were smaller. As for the width of the slats from one another, the point to be guarded against is the fish running their heads through far enough to strike their eyes which will produce blindness. The distance they are to be apart will depend consequently, mainly on the size of the heads of the fish, and as fish grow at different rates of speed, it will not do to go merely by their age, but for fair sized fish an opening of about five-eighths of an inch will answer. This refers to the upper screen, the lower screen, that at the foot of the pond, may be larger, as the fish are more cautious about descending where they cannot see their way.

The proportion of males to females in a pond should be about one-half. Not so many are necessary to fecundate the eggs, and it would be an advantage in one way to have fewer, since then there would not be so much fighting in choosing partners, and as all the females do not spawn at once, one male would be enough to serve several females; but, on the other hand, the males seem to run out of milt before the females get through laying their eggs, and towards the close of the season it is often difficult to obtain males with milt enough to fecundate the eggs; so that it seems better to have in the pond an equal number of males and females, thereby giving more chance of saving some of the milt till the last of the season. The males are very amorous, and will pair again and again. It very often happens, that some of them die from the exhausting effects of the season.

The trout will not spawn in the ponds where the bottom consists of large stones or weeds; but if there is sand or gravel anywhere on the bottom of the ponds, they will spawn on it. Therefore be careful to have only the raceway, where the water enters, covered with gravel. In October this may be washed and cleaned from the weeds which will have grown in it during the year. As soon as the fish are ready to spawn, they will ascend from the ponds into the raceway, seeking a place to nest. Then they are ready to be taken out and the spawn expressed. At the entrance of the raceway, there should be grooves to receive a frame, on which is tacked a net of coarse bagging about eight or ten feet long. One corner of this bag should be narrowed, left unsewn, and tied with a string, like the mouth of a meal sack. The race should be covered over in spawning time, as

the fish will come under the cover better and are not so likely to be frightened by any one passing. If there are fifteen hundred or two thousand fish in the pond, the net may be used every day in the height of the season, and when the fish become scarce, once in two or three days.

Indications of spawning having been observed, the covers are put on the races, and as soon as there are fish in the raceway, the net is gathered up in one hand and the frame held in the other, in such a position as to be put in the grooves as quickly as possible, so as to let none of the fish escape from the race. Go quietly to the spot, and do not walk down the raceway to get to it, but approach from one side and put the net in the grooves as quickly as you can. The water running down will swell the net out to its full length. The covers may be then removed, and with a stick you may frighten the fish down from the head of the raceway into the net. As soon as they are all in, the frame may be lifted out of the water, and the fish are then enclosed in the bag. A tub of water should be previously brought near the spot, and the end of the net can be lifted into the tub and untied, when the fish will all fall into the tub without trouble. Coarse cloth is better for the purpose than netting, as it can be more easily tacked to the frame, does not hurt the fish so much, and lasts longer; besides, the water swells it out and holds it open for the fish to run in better than it would a net, and the fish not seeing you through the cloth as they would through an open mesh, are not scared, and do not try to run back up the race.

The fish being now in the tub, must be taken to the hatching house without any delay. There are probably in the tub some fifteen or twenty fish, and all the

operations must be conducted as quickly as possible, so that they will not die in the small quantity of water to which they are confined. So long as the fish lie quiet in the bottom of the tub, there is sufficient air in the water to sustain them, but as soon as they come to the surface and try to leap out, it is a sign that the air is nearly exhausted and the water should be renewed. They will also open their mouths wide, just as a person would when gasping for air. Trout will die in a tub out of which the oxygen has been exhausted by their breathing, more quickly than they would die in a cloudy day if out of the water entirely.

A fire may be made in the hatching-house to warm your fingers, which will probably get cool while engaged in this operation. A six-quart milk-pan is to be provided, if you have many fish, and also another tub of water, into which to put the fish after they are deprived of their spawn. Select a fish, and holding it over the milk-pan, which has been dipped in water to wet it, rub it gently with the fore finger and thumb, from the pectoral fins to the vent. A little experience will show how this is to be done. If the fish is ripe, a few drops of pearly-colored milt, or orange-hued eggs, will be forcibly expressed in the pan. If the milt is not of this color, it shows that the milt is not good, and another male must be taken, and treated in a similar manner. The female must be pressed more slowly and oftener than the male. If the eggs are not ripe, by passing the hand lightly over the belly, you will feel them beneath, hard, like shot. In that case put the fish back into the pond, for the eggs to ripen. When the eggs are ripe, the belly will be soft and flabby, and the eggs beneath the

skin feel loose and change their position at the touch. The operation must be continued until the fish are emptied of eggs and milt. The eggs in the pan may, at intervals, be gently stirred by moving the pan; this is to change the position of the eggs, so as to be sure that all come in contact with the milt, and when the operation is completed, a half-pint of water is poured on them and the pan set in one of the hatching troughs through which the water is running; this will keep the eggs up to the proper temperature, and prevent a sudden change when they are transferred to the trough. The eggs will now agglutinate or stick to the pan, and to each other, for a little while.

The fish must be grasped by the head, if you are right-handed, with the right hand, and by the tail, or rather the lower part of the body, with the other hand, and held over the pan with the belly near the bottom of the pan. As soon as the fish is quiet, the right hand may be gently slipped down from the head, and the fore-finger and thumb used to press the belly. The fish still being held by the tail, and lower part in the left hand, and partly supported, perhaps, by the sleeve of the coat, or by the bare arm, and the remaining fingers of the right hand. The pan should be elevated at one side, during the operation of taking the spawn, by standing it on a block half an inch thick, and enough water will drip from the fish so that by tilting and shaking it, the milt can be brought in contact with the eggs.

After stripping a female once she should be returned to the tub from which she was taken, and should be stripped again after a short time, during which other fish are being handled. This is to get the last egg from her, and if it is not done a few will remain and she will go on

the spawning beds to deposit them as if she had a full supply. If she is cleaned entirely, she will not bother herself or her owner about the matter again that season. The California mountain trout retain their eggs and milt with more determination than our brook-trout, and must be humored like a cow that will not give down her milk to any one but the creature for which nature intended it. After the trout are handled they are returned to different tubs, according to their sizes, as this is the occasion to sort them.

Twenty to twenty-five minutes having now elapsed since the pan of eggs was set in the trough, gently tip up the pan. If the eggs are loose and roll separately as you move it, they are ready for subsequent operations; if not yet loose, let them remain a while longer. Pour off the dirty water until only sufficient is left to cover the eggs. If this is done very gently, the eggs, although very light, will remain at the bottom, as they are somewhat heavier than water; then sink the pan into the water, at the same time tipping it, and take it half full of water. The influx of water will wash the eggs around somewhat, and dilute the dirty water remaining in the pan. This is to be poured off, as before, and the operation repeated, until the water looks perfectly clear. There will be some dirt and droppings of the trout still left, which can be carefully picked out with the nippers. If an egg should happen to be broken, while being taken from the trout, every vestige of it should be carefully removed, as the slimy, sticky contents will get on the other eggs and kill them. The eggs are now ready to be placed in the trough, as soon as you shall have raised the water in the nest to which you wish to transfer them, by placing a strip across the

trough. Then sink the pan gently to the edge in the water of the trough, at the same time tipping the pan, so that the water in the trough and in the pan shall come together with as little current as possible. Then the edge of the pan may be sunk into the water, and by tipping the pan a little more, the eggs will flow out without injury. By moving the pan while the eggs are running out, they may be spread uniformly over the bottom. If they fall in a heap, take the bearded end of a feather, and move the water with it in the direction you wish the eggs to go, and they will follow the current thus created. This may be done without touching the eggs with the feather. Distribute the eggs as evenly as possible over the surface of the nest. Where they are placed upon wire sieves, these may be moved and shaken under water, so as to distribute the eggs evenly.

The strip which was placed across the trough to raise the water, should then be removed. Care must be taken that it be not removed so suddenly as to cause a rush of water, which would carry most of the eggs away with it. Raise the strip a little way from the bottom, so as to let the water run out gradually, and when it is very nearly or altogether at the proper level, the strip may be removed entirely. Those who have a nursery attached to the troughs, place the earliest eggs in the lower end of the trough, and keep placing them toward the top, so that the fish which are first hatched can run first into the nursery without disturbing the others. About ten thousand may be placed in each nest eighteen inches by fifteen inches.

If the eggs have been received from a trout breeder, they should be left in the packages in which they have

been sent until the troughs are ready for them. Persons will sometimes take the tin boxes containing the eggs out of the sawdust in which they were packed, and set them in the water of their troughs, with the idea perhaps of getting the eggs in the box to the same temperature as the water before unpacking them. This will surely kill the eggs in a few hours. Leave them in the original package until a few hours before you are ready to place them in the troughs. Then take out the tins and set them over or near the troughs, which will reduce or raise the temperature enough. Then empty the box into a tin pan full of water taken from the trough, pick out as much moss as you can readily with your fingers or nippers, and wash off the rest in the manner shown in directions for washing eggs hereafter.

The eggs are placed on trays made of wire cloth stretched on wooden frames. Each tray is twenty-seven inches long by fourteen inches wide, and will hold in a layer, one deep, six thousand two hundred and seventy-two salmon trout eggs. Instead of using only one layer of these trays, it has been the practice of late years to use four layers in the upper sections and five in the lower sections.

If only a few eggs are to be hatched (say eight or ten thousand) no hatching house is necessary. The troughs may be placed in the open air, in any convenient place, and covered with a wire screen, to keep out rats, mice and ducks. A light board cover must then be laid over them, to shed the rain and snow and keep the eggs from exposure to the sunlight. A hatching house is much more comfortable to work in. A stove may be put in it and a fire started occasionally for warming one's fingers, but it

is not needed for hatching purposes, as spring water in these latitudes is warm enough. The house may be constructed of rough boards, or as expensively as you choose, but care should be taken to have a water-tight roof, as drops of water leaking through and falling into the troughs will kill the eggs underneath. Its size must be regulated by the number and extent of the troughs.

The windows in a hatching house should be few in number and provided with curtains or shutters, as the sun shining upon the spawn will kill it. Not that a few minutes' exposure to the rays of the sun will hurt the eggs, but a few hours' exposure certainly will. Perhaps it would be well to have the windows, if possible, made on the north side of the hatching house, into which the sun will not shine in the winter season. Keep the hatching house clean. In fact cleanliness is one of the cardinal virtues to the trout raiser. He should have a clean house, should work with clean hands, and have all his pans, spoons and utensils of every sort free from grease and dirt.

The troughs should be made of seasoned timber, one and a half inch thick. They should be six inches deep and about fifteen inches wide, inside measurement. It would be better, perhaps, if the troughs were eight or nine inches deep, because then the water could be raised higher over the young trout after they are hatched out. The difficulty in making them so deep is that when the sides of the trough are made so wide, they are apt to warp or stretch apart at the top, and must be stayed in some way; for instance, by strips nailed across. But the cleaner the trough is of all strips, elbows, or grooves, the better. The troughs are divided into squares or nests by cross strips set on the bottom at intervals of eighteen inches.

These strips may be made of half-inch stuff and cut two inches in width. There is no necessity for nailing them to the bottom; fit them in accurately and set them edge-ways at intervals of eighteen inches. As they do not need to be removed often, it is better to make them fit tightly. Other strips of the same stuff must be provided, to fit upon these and made wide enough to raise the water within an inch of the top of the trough; as these need to be often moved, they must be made loose enough to take out, and yet fit accurately enough to raise the water over them when they are put in. New wood under the action of water develops a slimy sap, therefore it is necessary to paint the troughs with hot coal tar mixed with enough turpentine to thin it to about the consistency of paint. The troughs should have an inclination of about one inch in eight feet—just enough to let the water ripple gently over the cross strips. They should not be longer than twenty feet, or the air in the water will be exhausted before the water reaches the end of the trough. There is more danger of this after the eggs are hatched out and the troughs are full of young fish. If possible, the hatching house should be so far below the level of the spring from which its supply of water is derived, as to allow the troughs to be raised two or three feet from the floor.

The filter is a box six feet long by one and a half feet wide and one and one-half feet deep; in which four or five flannel screens can be placed through which to filter the water before it passes into the troughs. The coarsest and cheapest red flannel is the best. It will rot and must be renewed once or twice in a season. Red flannel will last twice as long as any other. The flannel should be

tacked on frames running in grooves set at an angle of forty-five degrees (the top down stream), so as to expose as much surface as possible to the water.

Sediment falling on the egg keeps the water off and destroys its life as effectually as if buried in the mud. If sediment falls upon the eggs it may be removed by gently agitating the eggs with a feather, or better still, by creating a current in the water with a feather.

From the filter the water runs into the distributing trough or pipe, which runs along the head of all the hatching troughs. The water may be let into the hatching troughs by faucets, or through holes cut into the trough. These holes should be covered with netting, or the young fish will run up out of the troughs into the filter, or coarse gravel may be heaped up at the head of the trough through which the water will run, but through which the young fish cannot work their way. The supply of water for one trough should be equal to that coming through a three-fourth-inch hole with three inches head; just enough to make a gentle ripple over the cross-pieces. Be careful to get the troughs level crossways, and the strips true, so that when the water is running it will form an equal current over every part of each strip along the whole length of the trough. The length of time required to hatch out the eggs depends upon the temperature of the water. A general rule sufficiently accurate for all practical purposes is this: At fifty degrees trout eggs will hatch out in fifty days, each degree colder takes five days longer, and each degree warmer five days less. The difference, however, increasing as the temperature falls, and diminishing as it rises. The best temperature for hatching is between thirty-five and forty-five degrees.

After the eggs have lain in the water from fifty to seventy-five days, according to the temperature, the trout will begin to make their appearance, the egg appears to be endowed with life, and the motions of the trout inside "kicking" against the shell to force a way out can be plainly perceived without the use of a microscope. At length the trout forces his way through, head first or tail first, those that hatch head first always dying, however, and the useless shell floats away down stream. The trout is then about one-half inch long, and the body proper as thin as a needle; the most prominent features being a pair of eyes, huge in comparison with the rest of the body, and a sac nearly as large as the egg. This sac is attached to the belly of the fish, and contains food, which the fish gradually absorbs. If the fish are hatched in fifty days, the sac lasts about thirty, if in seventy days, about forty-five. At this period of their lives they will work down into the crevices of the gravel and along the sides of the troughs and stay there, nature seeming to give them the instinct at this weak and defenceless period of their lives, when they are burdened with a load which they can hardly carry, to get out of sight and out of the way of harm.

The most critical period in the life of a trout commences when the umbilical sac is absorbed. More, perhaps, die from the time they begin to feed until they are six months old, than at any other time. In consequence many different plans for nurseries have been suggested and used. The fry require a largely increased supply of water, but where only a moderate number is to be raised, in place of erecting other and wider troughs or boxes for nurseries, the better plan is to put only a few eggs, say

five hundred, into each square or nest of the hatching trough. The square is then large enough with the water raised to keep the trout well for a month or two after they commence feeding, when they may be transferred into the first or upper pond.

The fry are removed from the troughs into the pond by the use of a small-net. Take them upon this, a few at a time, and put them into a pan of water; they will swim off the net and you may draw it from under them. In the pan they may be carried, a thousand at a time, to the pond in which you wish to place them. Put them into still water; they will settle down on the bottom and remain there for some hours, then they will begin to explore their new quarters, and in a few days will become thoroughly habituated to the place.

The best food for trout fry is raw liver, chopped as fine as possible, and then rubbed through a screen or sieve with a flat stick. It must be reduced to the consistency of pulp, and contain no strings or gristle. A chopping machine is made for chopping hash or sausage, and either that, or a couple of sharp knives are used to chop the liver. What is used is mixed with water so as to reduce it to about the thickness of cream. A teacupful of this mixture will feed a hundred thousand fish when they first begin to feed. The best way to feed them is to take a case-knife, dip it in the food and "slirt" off what adheres into the troughs; a very simple way, but one answering all practical purposes. Care should be taken not to feed too much, else the surplus food will remain on the bottom, and decaying there foul the trough. The reason of the difficulty in raising young fish appears to be that they are literally starved to death. The food which we

can give them is not natural to them, it is often given in such coarse pieces that they cannot take it, and sometimes, through the carelessness of a hired hand, they are neglected two or three days at a time.

Young salmon, young salmon trout, California mountain trout, and above all young California salmon are larger, have stronger appetites, and will accept coarser food. For them, although at first the liver should be made as fine as for trout, when they are a few weeks old it will be hardly necessary to dilute it at all, and in the course of a few months they will not only take the larger pieces, often tearing them apart, but will scorn the finer portion. At one time sour milk was almost exclusively used for feeding young fish, but it has been given up. Other foods have been tried, but with no better success. The fish will not thrive on any of them as well as they do on liver, and do not thrive on that as well as if it were a natural food. Near the salt water, where soft clams can be obtained, they are used in place of liver.

As they grow older, other things may be substituted or may be added to it as a change. They are fond of the roe of other fish, of the spawn of the horse-foot or king-crab; of fish itself, and when they are large enough to eat minnows, no better food can be given them. Liver is too expensive when it has to be used alone for grown fish, and beef lights are usually added to it or used in place of it in a measure. It is miserable food, however, much of it passing through the stomachs of the trout and salmon wholly undigested and collecting in the bottom of the ponds. It injures the digestive organs and must be deleterious to the health of the fish. Its only recommendation is that it is cheap. Maggots are bred on spoilt meat,

hung over the ponds, and as they fall off and drop into the water are readily devoured, and make excellent food. Or a piece of spoilt meat may be placed in a deep bottle like a preserving bottle, and the flies that will collect in immense numbers during summer may be caught and emptied into the water. This trap will take many times its bulk of flies being kept set all the time and emptied when any one is passing it. Flies are probably the best food that can be given to trout.

Shad eggs differ essentially from trout eggs and require wholly different manipulation. They are much smaller and lighter. If a trout or salmon egg is dropped into water it sinks at once to the bottom, but a shad egg will almost float, and has but little more specific gravity than the water itself. Shad eggs are less than half the size of trout eggs, and require as their best condition for hatching a temperature of from sixty-five to seventy-five degrees. They will hatch at a lower temperature, but in such cases mature slowly, while eighty degrees of heat is as much as they can endure. When experiments were first made in their artificial propagation, they were placed in ordinary trout troughs, and much trouble was found in their management. If a current of water was turned on to the same extent as with trout, they all washed over the end of the troughs, while if the supply was diminished so that they retained their places, they died of suffocation. It was only after many different devices had been tried that the proper invention was discovered—a simple box with the bottom knocked out and replaced by a wire gauze netting. This box is suspended by floats of wood nailed on the sides, so that the bottom is presented at an angle to the current, the degree of inclination being

determined by the velocity of the current. The water striking against the screen enters the minute interstices, and lifting the eggs, keeps them in gentle motion like the bubbles of air in a pot of moderately boiling water. All that is necessary is to attach these boxes one behind the other in a long row, anchor them in the river, and fill them with impregnated spawn, and the work is done. The continuous motion of the water passing around each egg and holding it suspended, aerates it perfectly and makes its hatching a certainty. Hardly one per cent. of healthy eggs fail to hatch, and while the process is going on hardly any care or attention is required. Fish and eels cannot enter the boxes to prey, nor can the eggs be driven out by the water, and lost.

In the artificial manipulation of shad the parents are taken in seines from their spawning beds. The haul is made at night, at which time only can ripe fish be found in any considerable number. The captured fish are thrown indiscriminately into a boat and are stripped at once as they die quickly. They are afterwards sold in the markets. The eggs, which are caught in a pan with a little water in it, after being allowed to stand for a few minutes until impregnation is complete, which is signified by their swelling in size and reducing the temperature of the water some ten degrees, are poured into the hatching boxes and left to themselves. Nothing more is required. In twenty-four hours the black eyes of the young fry will be visible through the shell, and in from three to ten days they will be hatched.

Black bass is one of the most prolific varieties of our fresh-water fish. Their natural increase is so great and their growth so rapid, that it has never been an object to

fish culturists to attempt their artificial propagation. When the spawning season draws near, they select, guided by natural instinct, with great care for the purpose of propagation, certain portions of the river having a pebbly or gravelly bottom. From these they remove carefully all sediment, weeds, and sticks. This work completed, leaves a clear bright space in the bottom of the river, circular in form, and having a diameter of about three feet. These beds are readily distinguished by the casual observer from the ordinary bottom of the river by their brightness, the gravel having the appearance of being washed or scoured. When the parent fish are ready to spawn, the female goes upon this prepared bed and deposits her spawn in a glutinous band or ribbon, running in various directions across the bed. She is followed by the male who impregnates the eggs by the expression of his milt.

Their care of the young (the exercise of which is peculiar to the bass, sunfish, and catfish), taken in connection with the fact that a large pair of bass will deposit twenty thousand eggs, will give some idea of their fertility. Possibly the fish are capable of reproduction when two years old, having at that time attained the extraordinary length of eight or nine inches, but this is mere conjecture, based more particularly upon our knowledge of the size and weight of the fish at that age. They frequently attain the weight of five and six pounds; in rare instances seven and eight. They are unsurpassed in flavor by any of the perch family.

The black bass loves bright, pure, lively water, not as cold as the trout streams of our spring-producing hills and mountains, but free from foul matters held suspended

in it, and with motion either of current or from the winds. It deposits its eggs on rocky or pebbly ledges. The parents guard and protect their nests till the young are hatched, and even watch over the latter till they can take care of themselves. The fish generally selected for transfer are from one to three years old, measuring from three to twelve inches in length. Fish of this size are not only more numerous, but they bear transportation better, and are more readily acclimated than when larger. They are moved with a great deal of difficulty in hot weather, especially when the journey requires more than twelve or fifteen hours; but with care and skill no serious loss need take place.

The implements of the fish-culturist are few and simple. A few feathers may be kept on hand to use in spreading the eggs when placing them in the troughs, in collecting them for packing, and moving them in the search after dead eggs. Nippers made of wire or some elastic wood, like red cedar, bent or cut into the shape of the letter U, elongated to about six inches, and with loops of wire at the ends about the eighth of an inch wide, will hold an egg without trouble. A small homœopathic phial is used to examine the eggs. The manner of its use is, to fill it with water, put in the eggs to be examined, cork it, hold it up before the window in a horizontal position, and with your microscope look up through the side of the phial. This brings the egg which lies at the bottom of the glass within the focus of the microscope, and the water does not distort its shape. The microscope need not be very strong; one magnifying eight or ten diameters is amply sufficient. A small net will be of use in removing the young fish and any refuse in the water from the

troughs; it should be about six inches in diameter, in the shape of the letter D, with the handle on the middle of the bend. It is very easily made by bending a wire in the desired shape, and twisting the two ends together for a handle. Thin gauze of some kind, like bobinet, should be spread over the wire so tightly that the middle of the net shall hang only a half inch below the level. An iron spoon, well tinned or silvered, is used to remove the eggs. Some six-quart tin milk-pans will be necessary, for a variety of purposes. Eggs may be counted most easily by measuring them. For this purpose take any small glass, such as a very small tumbler, for instance, count out five hundred or a thousand eggs, and with a file make a mark upon the glass as high as they reach, and the measure is always ready to your hand.

A watering pot with a fine rose spout is used to wash sediment from the eggs on the sieves, and a broom of twigs is used to brush the screens of wire.

One of the most curious and interesting results of fish-culture has been the production of hybrids, some of which were reproductive and have thus created new species. Strange as it may seem, these experiments have rarely been wholly abortive; no matter how dissimilar the families, the eggs have been impregnated often to a large percentage, and have hatched. The following varieties have been crossed:

FEMALE.		MALE.
Salmon-trout	with	White-fish.
"	"	" Brook-trout.
Brook-trout	"	Fresh-water Herring.
"	"	" California Salmon.
"	"	" " Mountain-trout.
Shad	"	Striped Bass.
"	"	" Herring.

It is observable of all hybrids that they are shy and wild; more so usually than either of their parents, and that in appearance they favor their larger parent. The cross between the brook-trout and lake-trout has been repeated from year to year, till fish which are one-eighth salmon-trout and seven-eighths brook-trout have been produced which it is hoped will have the size and toughness of the mother, with the beauty and gameness of the father.

These experiments commenced with a cross of the brook-trout and California salmon, which had an interesting and instructive termination, and prepared the way by its failure for subsequent successes.

In September, 1879, the young of the brook-trout and California salmon were seen to be maturing their eggs. This was the first time in the history of fish culture that hybrids gave evidence of breeding. It is asserted that among animals, mules are occasionally known to produce young, but this is a most unusual exception to a general rule. No more was expected from the experiments in crossing varieties than the production of combinations which might be valuable in themselves, like the capons among fowls, or the mules among draught animals, but which must of necessity be purely ephemeral, and perishing with the lives of the individuals. But when these hybrid trout-salmon were opened and found to contain eggs quite large and well forward in maturity, it seemed possible that new species might be created and made permanent. The eggs were already larger than the mature eggs of the trout, although it was then early in the season, and seemed perfectly healthy. As time passed the parents were watched with care, and were soon seen to be going into

the spawning-race. They apparently made all their preparations for spawning, began digging their nests, stayed about them, and proceeded in the regular way, except that they were never in pairs, but always single. This was not natural, and led to a careful examination of them individually. After examining some fifty out of the sixty, the conclusion was reached that they were all females, which eventually turned out to be the case. This was in the latter part of November, 1879. Some dozen male brook-trout were then placed among the hybrids, to see if they would induce the latter to spawn. Everything soon appeared favorable for this result, the trout paired with the trout-salmon, they entered the race-way together, and occupied themselves with parental duties, but no results were perceived. For some reason the spawn was not deposited. Then some of the fish were selected to be stripped by hand, and were found to be ripe, but the eggs were all crushed in passing from them. The vent of the ovaries or oviduct was too small to allow the eggs, which had delicate shells, to pass. Attempts were then made to enlarge the vent, and some thousands of eggs were finally obtained in this way uninjured. To impregnate these the milt of the male trout was used. The parent fish were left in their pond and seemed to be uneasy. They were doubtless incommoded by the eggs which they could not pass, and moved about slowly with their heads towards the bottom, their tails upward, and their bodies at an angle to the surface. The eggs which it was hoped might be impregnated by hand, were retained until January 25, 1880, when it was found they were unimpregnated and dead, and they were thrown away.

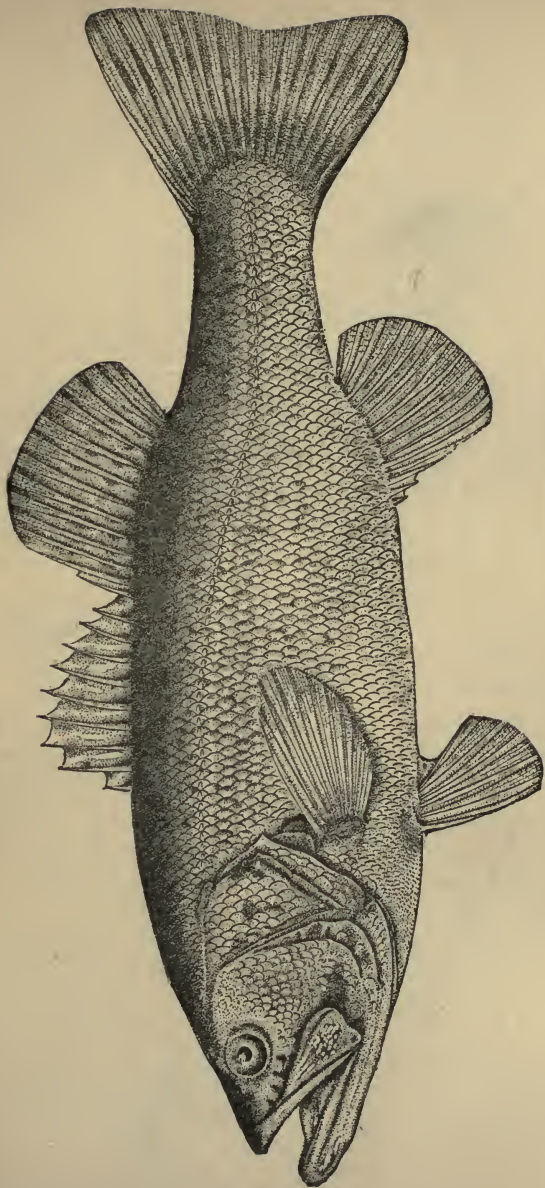
Thus two extraordinary facts were ascertained, one that

the eggs may be too large for extrusion in case the male parent is the larger variety of fish, and the other that the entire body of one hatching may be of a single sex as in this case when all were females, and in the case of the shad and herring in the Hudson River, which are all said to be males. It was on these two discoveries that subsequent improvements were founded. It is not yet positively determined that these cross-breeds will procreate their species in a natural way, nor even that they will be the improvement, which has been hoped, but that they can be bred artificially there is no further doubt.

An indirect result of fish-culture has been the introduction of foreign fish into home waters. The German carp has been brought to America, and has increased and multiplied vastly, and been found well adapted to certain waters, which are not valuable for finer fish. In dull, muddy, small ponds, they have not only lived, but they have grown to a remarkable size. We have also received some German trout, which hatched and grew well, and which promise finely for the future. Then we have sent our black-bass to Europe as well as our trout, the California trout and salmon. We have acclimated in California the Eastern shad, and imported from California the trout and salmon of that country. This interchange has been mutually advantageous and promises to be much more so in the future. The results of fish-culture have indeed far exceeded the most sanguine hopes of those who first took it up, and at present there seem to be no limits to its beneficial effects. The time will surely come when the streams, which have been so long utterly depopulated of their natural inhabitants will once more be restocked and yield as abundantly as ever. This has already happened

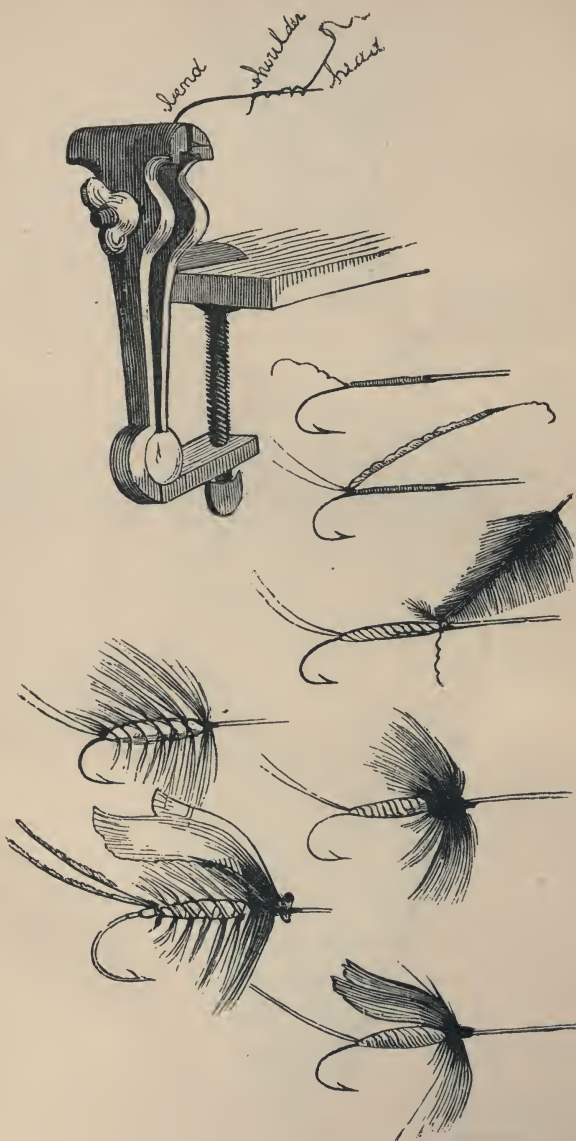
with the Connecticut River, which from having been almost exhausted, has been so successfully restocked that it produced in one year more shad than had ever been caught from it since records had been kept. The Hudson River had been also rendered nearly worthless as a shad river when fish-culture was first applied to it, the nets were being taken up and the fisheries abandoned, the price of even small shad had risen so as to exclude them from all but the tables of the rich, whereas now the yield is nearly as numerous as ever, and much larger fish are taken. So while neglected Southern rivers are exhausted, the Northern ones are being replenished. The same will follow with the fresh waters. If the trout brooks have become too warm from the destruction of the forests, other varieties, such perhaps as the California trout will be substituted. There are millions of just such streams and ponds, which are now nearly valueless, but which could be made quite as valuable as the same amount of land. These will yet all be replenished till the streams and ponds will come to be regarded as the most valuable part of the farm or country place, and millions of property will be added to the wealth of the country.*

* For thorough instruction in the details of the artificial cultivation of all varieties of fish, the reader is referred to a work entitled "Fish Hatching and Fish Catching" written by Seth Green and Robert B. Roosevelt which exhausts the entire subject.



LARGE-MOUTHED BLACK BASS. (*Grystes Salmoides*)

FLIES.



CHAPTER XXVII.

FLIES AND KNOTS.

It is generally considered that fly-making cannot be taught by written instruction, but this depends somewhat on the intelligence of the scholar, who must not undertake to conceive the result before he has waxed his thread, but should be content to follow the directions word by word. At all events there is something that the experienced, and an immense deal that the partially instructed beginner may add to his store of knowledge, and if the following directions will not make a novice perfect, they may aid him when he has had a few personal lessons. To tie a fly, the gut should be singed in a candle or bitten at one end, and the hook and thread waxed to insure the hook's not coming off, which, when a fine fish has it in his mouth, is a heart-rending casualty. Take a few turns with the thread on the shank of the bare hook, nearly to the head, then applying the gut, whip it firmly on by working back to the bend; under the last turns at the bend insert whisks for the tail dubbing, floss or herl for the body, and tinsel if desired. The floss, silk and dubbing are generally spun or twisted in with the thread, and then wound back toward the shoulder, but they may be wound on before, with, or after the thread. Care must be taken that the turns

at the bend be firm, and when the material is carried back, the body is finished with a couple of turns of the silk, a hackle is then introduced under them and firmly secured. Wind the hackle round the hook at the place where it is inserted, and when it is sufficiently thick, and the fibres which constitute the legs stand out well, tie it down. Prepare your wings by stripping off the requisite number of fibres, and tie them on, either single or divided, and finish off. To make a buzz-fly, that is, one with the hackles the whole length of the body instead of only at the shoulder, insert a hackle at the bend at the same time with the body and tail, and twist it round the body after that is put on, and fasten it at the shoulder. The wings are sometimes laid on pointing up the shank, and afterward bent down and brought in their places. And thus, if any one desires, he may make a fly.

Few people in this stage of civilization dress their own trout flies, and although skill in the art will enable you to make a better selection in your purchases, it is rarely useful at the riverside. The better plan is to have a great variety, keep them safe from moths by the use of a linen bag, and fish often enough to prevent the gut's decaying. I have flies that have been in my possession for fifteen years, and yet seem to be as good as ever. You would require a knapsack to keep all the articles requisite to dress every fly, and would waste half your day in the operation. Nor is it yet settled that by imitating the natural insect you gain any advantage; one half the most skillful fishermen assert that the fly, as for instance, the scarlet ibis, need resemble nothing on earth, or in the

waters under the earth, and that the sharp-sighted fish are never deceived by thinking ours the natural insect, but take him for some new and undescribed species. As for myself, to use the quaint language of the editor of the "Knickerbocker," "sometimes I think so, and then again I don't, but mostly I do." On certain occasions it would seem that the closer the imitation the better, on others the less the similarity the greater the success. Upon this question my friends stand like the hackle on a well-dressed fly, "every which way." At any rate, it is no time to be dubbing when you ought to be fishing, and if you cast a long line and a light fly and the fish will not rise, you may be sure they will not.

The various flies that appear upon the surface of the numerous and varying waters of our country, from the borders of Mexico to the confines of Labrador, would furnish the subject for an instructive and interesting work.

The natural flies, whether hatched from the caddis at the bottom of the streams, or from the burrows in the ground, or the knots on the limbs, or the cocoons amid the leaves of trees, are more numerous than those of any European country. As a class, they are larger, the ephemeræ especially, and although often found to be similar in general appearance, furnish many species unknown there. They have never been properly described and classified, and no satisfactory work has been written, at all thorough and reliable, in which an attempt is made to record their nature and habits.

Many of them do not return every year, but seem to require several seasons to mature, and the earliest fly of one season may not be that of another. Every observant

fisherman has noticed flies at one time that he may not see again for a long period, and has found his imitations of them perfectly useless.

The first tree that puts forth leaves in the spring is the maple, and its buds are a bright scarlet. As they drop into and are swept along the surface of the water by the wind, the fish seize them, no doubt either decoyed by their appearance or attracted by insects that may be concealed upon or within them. The scarlet ibis resembles these buds nearer than any other known thing, and is probably mistaken by the fish for them.

When commencing this work, it had been my intention not only to describe the artificial flies in general request, but to give the habits, periods and names of the natural ones of which they were imitations, without which latter information the former would have been far from complete. But the obstacles in my way were so numerous, the confusion existing as to names, localities, and times of appearance was so utter, the difficulty of finding any satisfactory work on the natural insects so great, that I was almost in despair; on the point, however, of making the attempt, rash as it appeared, I was informed that the matter had been undertaken by a friend of mine, who is every way equal to the task. Although much relieved, there was still something to be done to give a general idea of the flies in use with us. On this subject, the only work existing of any value is the supplement to Frank Forester's "Fish and Fishing," written by a gentleman who is a thorough sportsman, and alongside of whom I have often had the pleasure of casting the fly. The directions in the body of that work itself,

like many other parts of it, are copied from the English writers, and in our waters are utterly valueless. The author, although a splendid sportsman, was not as an angler acquainted with our trout streams and ponds, and the contributor of the supplement judged rather too exclusively from his experience on Long Island.

The first and most striking difference to be observed between the systems of the two countries is in the comparative size of the flies, those of America, following the natural insect, being larger, and, probably for a similar reason, gaudier. It is a remarkable fact that the most gaudy of all, the scarlet ibis, is prominently successful alone in the streams of Long Island and of the British Provinces. As many of the Long Island trout yearly migrate to the sea, in which peculiarity they resemble the fish of the latter place, it may be that this fly is only a favorite with sea-going fish. A little tinsel wound round the body is supposed to improve its efficiency, as some fishermen suggest from a resemblance to the principal Winter food of the trout, the salt water minnow.

The earliest fly on the Long Island ponds is a dark water fly, with a brownish red body and legs, and black, filmy, transparent wings. It is rather large, is wafted along upon and occasionally rises from the water, and never appears in any considerable numbers. It is usually represented by the English or female cow-dung, which, although not similar in coloring, presents somewhat the same general appearance. The wings, being transparent, should not be imitated with a black feather, although I have had great success when these flies were on the water with a fly that had black wings and a claret body and

legs. The orange dun, with a body tinged with brown, would be a good imitation.

The next natural fly, which is smaller than the last, is of a greenish yellow, and is also caricatured by the cowdung. But it is decidedly recommended to make a more faithful copy, which the writer has done with eminent success. In speaking of this matter, it is important to add that the midges, such as the black gnat and others, are out earlier, and it is to the larger flies alone that reference is made. The earliest of the species mentioned appears in ordinary seasons about the first of March, and the next about a week later. At this period, and at all periods, of a bright day a large black gnat with black hackle, black or dark blue body, silver tinsel at the tail, and dark wings, is usually successful.

Shortly after the greenish fly, come many others, appearing almost together, and among them the cowdung and the yellow sally, the latter occasionally fairly covering the water. About this time the professor answers well, although I have never discovered its prototype, if it has any, and shortly afterward an unimitated brown fly, together with the blue blow and cinnamon, and in warm weather innumerable others. In the latter part of April and early part of May, the bushes and streams are alive with the gay little beauties, of every color, size and shape, and the fish make them their principal food. But the waters are growing clear, the deception is becoming apparent to the fish's eye, and the insects, though in reality larger, must have more delicate substitutes. At such times a small red bodied fly, with dun wings, has proved extremely killing, and although large, white,

gelatinous ephemeræ swim upon the water, the midges are on quiet days the most successful ; and when the sky is bright, subdued colors are in principal demand.

In June there are prominent, among many others, the black fly, with body, wings, legs and antennæ all of the same sable hue, busy the entire day dancing over the water a veritable dance of death, for it is often terminated by the fatal rush of the watchful trout ; a dun fly, with greyish dun mottled wings, grey legs, and light green body ; another fly with similar wings, but red legs, and a rich brown body—none of these having any whisks in their tails ; another beautiful and delicate yellow fly, that appears generally in the morning and evening, and flies heavily and slowly from place to place, till it falls suddenly, and is forever submerged in the cruel waters. Its legs, body and wings are yellow, the latter being the palest, and it has two short whisks and antennæ of the same color. All the foregoing have four wings, in the black and yellow varieties strongly reticulated, and all but the last swim well under water. Toward night a frail whitish fly makes its appearance still more fragile than its yellow compeer ; it has two wings, a thick body and long whisks. The eyes of the yellow and white fly are black spots, and although I never have done much with a white fly, a small yellowish drake was successful when the yellow flies were abundant. A better imitation however could be made of pure yellow.

On one occasion I was struck with the fact that although I did not know these insects were on the water, my only successful flies were a yellowish fly, a green-bodied, dun-winged fly, and a similar fly with a brown

body, and I hit on them accidentally after trying a great variety.

Hackles, in our Long Island ponds, are, by universal testimony, a failure, and the palmers worthless; and throughout the breadth and length of our country, the winged flies are vastly preferable. The hackles and palmers are intended to represent the caterpillars, which our fish very sensibly ignore alongside of the innumerable beautiful, delicate and gaudy flies, and which under no circumstances are found except in the fresh-water brooks. Through all the early Spring, the stomachs of the trout will be found filled with the shells of the caddis, and these, if they could be obtained, would doubtless be a killing bait. Fortunately they cannot be, and are not to my knowledge used here at all.

In our mountain streams the fish are generally extremely numerous, though small, and will eagerly seize any fly presented to them, vying with one another to be first. The following is a good assortment, and will, in addition to those already mentioned, be sufficient for all waters: The alder-fly, English partridge hackle, hackles of all colors, red and black ants, the devil-fly with a yellow body, the tail of one red and one black whisk, black hackles and red and black wings, dark mackerel, red spinner, English blue jay, fern-fly, orange dun, the camlets of various colors, grey, dun and black nidges, the coachman, the stone-fly, the May-flies, millers for night-work, the sand-fly, the various other duns, the turkey brown, and a large light grey fly.

As each maker employs different colors and feathers for the same fly, these descriptions are rather indefinite.

but by taking a number of various shades, you can readily select the most effective. The well-known flies should be dressed after Ronalds as far as practicable. It is to be regretted that there is not more uniformity and pride in, or practical acquaintance with, the subject among our principal tackle-makers. With the English makers it has always been an especial care that their flies should be dressed well and with uniformity; but here, anything that can be palmed off on an ignorant or indulgent public, or a barbarous country trade, is all that is desired. It is better always to send a pattern, with instructions to copy it precisely, and that no originality of variation will be permitted. Then, and then only, can you obtain what you wish. So much for trout-flies.

To make a salmon-fly, the following additional directions, most of which apply equally to carefully made trout-flies, will be found convenient. Tie on the gut as before directed; upon reaching the bend, fasten the spring pliers on to the thread, and do not take them off till the fly is finished. Take two turns with the silk over a strip of tinsel, pass the latter several times round the hook to form the tag, fasten it with the silk and cut it off; introduce the floss for the tip, take several turns evenly, tie it down and cut off the end; introduce the tail and then a piece of herl, wind the herl at the root of the tail and fasten it; take in a new piece of tinsel and a hackle by rubbing back all the fibres but a few at the point; leave both pointing from the head. Take a small piece of mohair between your fingers, break it over and over again into small pieces, lengthen it out and twist it round the silk toward the left, as otherwise it will

unlay in winding; wind the silk and mohair together round the shank to the shoulder, leave a space of bare hook sufficient for the wings. Wind in loose coils first the tinsel and then the hackle, and fasten both at the shoulder. Strip two wings from feathers that have been taken from the opposite sides of the bird, place them together, hold them firmly on the hook with the left forefinger and thumb, and fasten them securely. Cut off the ends, insert a piece of herl, wind it over the head and tie it down. Lay the end of the silk back down the shank, and take three turns with the other part over silk, hook and gut; pass the gut end through the loop three times and draw the silk tight. Two turns of silk should hold the different parts during the entire operation, and a couple of half hitches under the wings at the shoulders are sometimes used to fasten off. The feathers should be mated to make neat wings, and if they are laid right side out they will close round the hook; if otherwise, they will stand out. Do not fail to varnish at the head with wood varnish, or some other kind that will dry rapidly. The hackle may be introduced at the shoulder. Where herl or floss is used for the body, it is wound on separately from the tying silk, which is sometimes passed in loose coils afterward. A second hackle of a different color, or a feather wound like a hackle, may be introduced after the first, or after the wings and before the head is finished, and is called the legs. The wings must be tied above the dubbing on the hook, or they are liable to turn, especially where floss silk is used for the body.

The following is a list of Canadian salmon flies, copied

from the work on Salmon Fishing in the Provinces, edited by Colonel Alexander, supposed to be by Dr. Adamson, with two of my own added; the latter having been furnished by a friend of extended experience, are warranted excellent:

No. 1. LOUISE.—An extremely beautiful fly, having wings composed of the golden pheasant's top-knot, breast feather and tail, with sprigs from the green parrot, blue macaw and kingfisher; the body is of fiery brown mohair, with gold twist; the head of orange mohair; the tail, a single feather from the golden pheasant's top-knot; reddish-brown hackle and jay legs.

No. 2. EDWIN.—A much simpler fly and often equally efficacious among the fins, the wings being composed of the golden pheasant's tail feather with a dash of yellow macaw; the body, yellow mohair; ribs, of black silk; head, black mohair; tail, golden pheasant's top-knot; hackle, yellow; and scarlet silk tip.

No. 3. FORSYTH.—Wings of the yellow macaw, with a slight dash of mallard wings at each side; yellow mohair body, with black ribs; head, black; tail, golden pheasant's top-knot; hackle, yellow, with light blue silk tip.

No. 4. STEPHENS.—Wings of golden pheasant's breast feather, with slight mixture of mallard; body of reddish brick-colored silk, gold twist; head, black ostrich; tail, golden pheasant's top-knot; hackle, red, to match the body; tip, blue silk.

No. 5. ROSS.—Wings of mallard and peacock's herl; body, cinnamon-colored silk, gold twist; no head; tail, green parrot; red and black hackles and black tip.

No. 6. THE PARSON.—This is a beautiful and efficient

fly. The wings are mixed, and very similar to those of No. 1, but have a slight mixture of wood duck in them; the body is of very dark claret silk, with gold twist; head, black ostrich; tail, golden pheasant's top-knot; hackle dark claret; legs, blue, with a tip of yellow and gold.

No. 7. STRACHAN.—Mixed wings, chiefly of golden pheasant's tail, yellow macaw and jay's wing; body of crimson silk with gold twist; head, black ostrich; tail, golden pheasant; black hackle, with jay's wing legs; tip, yellow and gold.

No. 8. LANGEVIN.—Wings, body, tail, hackle, legs, tip all yellow, made of the dyed feathers of the white goose; the head of black ostrich, and the twist of black silk.

No. 9. WHITCHER.—Mixed wings, of mallard and hooded merganser, the latter being like the teal wing, only more of a yellowish green, or the tail of the golden pheasant may be used; head, black ostrich herl; black hackle and black mohair body, with a thin rib of silver; tip, yellow silk; and tail from the top-knot of the golden pheasant.

No. 10. GREY FLY.—Mixed wings, of mallard, turkey, golden pheasant's neck and top-knot, and sprigs of blue macaw; head of black ostrich heel; legs, carmine; grey hackle; body of a grey mohair, with silver ribs, and tip of silver and deep orange silk; tail, mixed grey mallard and tail of the golden pheasant.

It will be observed that the foregoing are not imitations of any natural insect, but merely fanciful combinations of beautiful colors. The more harmonious the tints the finer the effect. Some of them are gay flies, gaudier

than I should recommend ; modest colors suit the salmon as they do the ladies of our country. For the rivers of New Brunswick more particularly, I would add the following, requesting the reader to bear in mind that larger and more brilliant flies are permitted among the rougher waters and heavier fish of the Canadas.

No. 11. NICHOLSON.—Wings mallard with sprigs of blue macaw ; body, blood-red mohair, head of black ostrich herl ; hackles, one blood red and one dark blue wound on together ; gold ribs and tip ; tail, mallard and golden pheasant neck. This is one of the best flies ever cast on the Miramichi or Nipisiquit, and is simple and inexpensive.

No. 12. CHAMBERLAIN.—Turkey wing, the lighter and darker fibres mixed, or turkey and mallard ; head, black ostrich herl ; orange mohair body and hackle, yellow legs, silver or gold ribs and tip and black silk twist ; tail of golden pheasant top-knot.

No 13. DARLING.—Wings of turkey and golden pheasant neck feather and sprigs of blue macaw ; head, black ostrich ; hackles, black along the stem, but with reddish ends ; tip, orange silk ; tail, golden pheasant top-knot ; thin gold ribs and tag and black mohair body.

No. 14. MAJOR.—Wings of mallard and turkey with sprigs of blue macaw ; head, claret herl ; light red hackle, and orange legs ; body, deep purple mohair ; tip, blue silk : tail, golden pheasant neck feathers ; ribs and tag gold tinsel.

No. 15. CAPTAIN.—Wings of turkey and golden pheasant tail and neck feathers and sprigs of blue macaw ; head claret herl ; red hackle ; body, claret mohair ; tip,

orange silk; silver tag, gold ribs, and tail of golden pheasant top-knot.

No. 16. CARIBOO.—Wings of turkey and mallard with sprigs of macaw, and a few fibres from the golden pheasant's neck; head of black ostrich herl; claret legs; grey hackle; body of grey cariboo hair or mohair; lower part of tip golden yellow silk, and upper part black silk; tail, golden pheasant top-knot, and gold tag. This fly, with various modifications, is extensively used by the resident fishermen of Fredericton.

No. 17. EMMET.—No head; wings of black and golden pheasant neck feather with sprigs of macaw; body, black mohair; black hackle; gold tip and twist; a turn of black herl taken just above the tail, which is golden pheasant crest.

No. 18. LILLIE.—Wings and tail dark grey turkey; body, mohair of the same dull color; yellow silk tip; red hackle, and no head. This is almost identical with the stone fly, and approximates in color to the natural fly, and is generally dressed on a small hook.

There is no limit to the list of salmon flies that might be given; artistic beauty is a great point to be gained, but further than that nothing is positively ascertained on the subject. I was once visiting a well known salmon river with fifty dozen flies loaned to me by an excellent angler who was one of the oldest *habitués* of the stream. Another excellent fisherman looked over my books with an unapproving air, and after my return told me that he was surprised I had taken any fish at all, for my flies were totally unsuited to the river. It is, however, generally conceded that different waters require different

flies, and those in vogue in Canada are much gayer than those of New Brunswick. In Great Britain it was once the custom, as it still is in Wales, to use sombre colors; in England and Ireland the gayest are now the rage; perhaps it will be the same here, and in the end we may find that handsome, gaudy feathers answer best.

The turkey wing is of various colors, but where no other specific direction is given, the common mixture of black and brown is intended. Some sportsmen pretend to assimilate their flies to the sand-lance, others to the shrimp; as the salmon obtain neither in fresh water, there is little to choose between the plans.

As will be seen, therefore, from the foregoing, salmon flies are much more complicated than trout flies, and require more skill in their manufacture. The wings are ordinarily made of numerous fibres, frequently of distinct feathers, which are fastened separately upon one another, and usually called toppings. The hook is often first tied securely with thick silk and then varnished, while a small loop instead of a length of gut is used. This is allowed to dry, and finer silk, usually the color of the intended fly, is employed to tie the feathers. Occasional fastenings may be made by taking a hitch over the whole, and varnish is applied, especially at the head and tail. After the hook is tied on, the silk is made fast at the bend, where the tinsel, the whisks, the body and the hackle are inserted; the latter may, however, be introduced after several turns have been taken with the body, and the body may be divided into sections of various colors, in a manner that the least practice will render easy.

It is no small matter to give a list of the requisite fly-making materials, but the following are a few of the most important :

Silk of various colors, wax, nippers, scissors, a bench vice, picker, spring pliers, varnish, hooks and gut, tinsel of gold and silver, twisted and plain ; hackles of all colors, feathers of the mallard, teal, woodcock, golden, silver and argus pheasants, turkey, macaws, curlew, ruffed grouse, ibis, blue-jay, black-bird, fresh water rail, guinea fowl, common chicken, and any and all other birds that may come in the angler's way ; dubbings of mohair, pig's hair, wool, seal's fur, rat's, mole's and squirrel's fur ; floss silk of all colors, and peacock's and ostrich herl. Dyed feathers had better be purchased of the tackle makers, and should include blue, purple, orange, yellow, brown, green, crimson and scarlet hackles, and yellow wing feathers.

There is a Limerick hook now made with the shank turned over so as to form a loop into which the gut is inserted and the trouble of tying the gut is avoided. They have come into general use among the Irish and Scotch fishermen, and are a great aid to the man that ties his own flies. The gut in ordinary fly fishing wears out just above the hook, a difficulty that is entirely removed by this improvement, and it is by no means so ugly or ungainly as might be supposed. This is no new discovery, but has been practised with common American hooks for a considerable period, and might be advantageously used in many kinds of fishing, and applied to all hooks.

Hooks are numbered in the most singular manner, no

two makers agreeing, and some indulging in remarkable eccentricities. But as Limerick hooks are generally used for fly-making, the numbers 2, 1, $1\frac{1}{2}$, 0 and $\frac{2}{0}$ will include all that is requisite. No. $1\frac{1}{2}$ is my favorite for ordinary purposes, but a few $\frac{3}{0}$ may be desirable in heavy water, with an occasional monster for foaming rapids.

The charges for dressing trout flies in this country are exorbitant, whereas in England they can be purchased of the best makers at from seventy-five cents to a dollar and a half per dozen; we are charged from a dollar and a half to three dollars, and generally furnished an inferior article. There is an abominable article of wholesale traffic sold for fifty cents a dozen, that is beneath any sportsman's notice. I have imported a great many, but it is a troublesome operation, and the best way is to bear the imposition meekly.

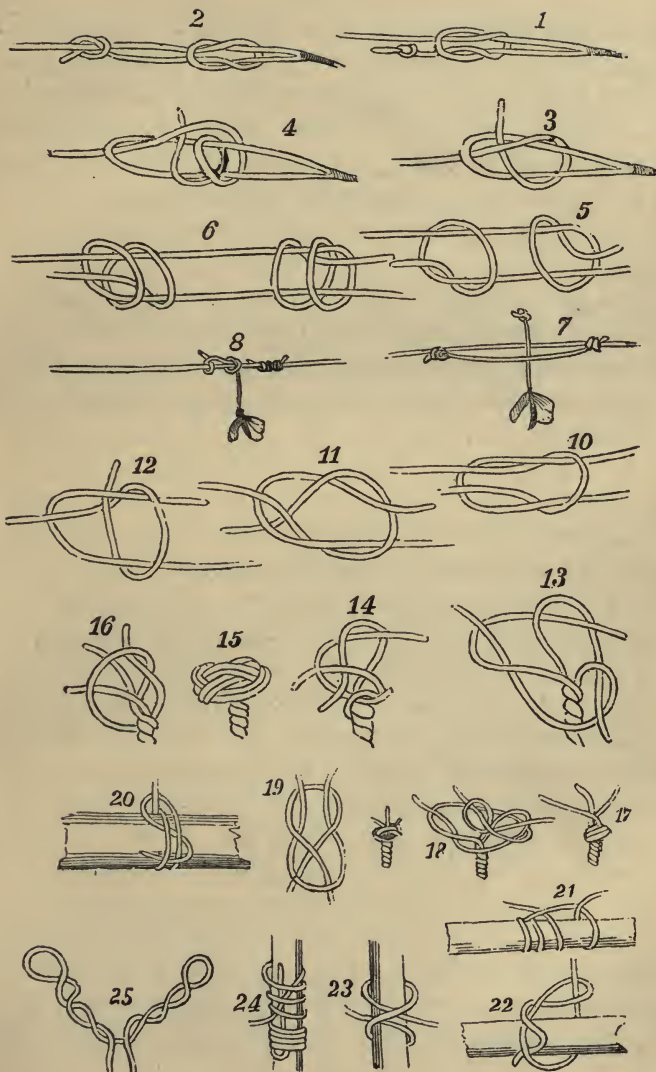
The English and Irish salmon flies are, on the contrary, expensive; a great deal of the neck and top-knot of the golden pheasant and of the wings of the blue-jay is employed, birds which cost from ten to twenty-five dollars a piece, and which only furnish twenty to thirty pairs of each kind of feathers. The use, therefore, of several long crest and neck feathers at fifty cents a pair in the wing, and five or six from the top-knot for the tail, besides other expensive materials and the employment of the best workmanship, will make a fly dear at the original cost. Blacker, the great English rod and fly maker, has been paid two guineas apiece for his finest. The reader may console himself by remembering that salmon were taken with the fly before the golden

pheasant was heard of as one of the indispensable ingredients. A little practice will enable the angler to make flies himself, and add to his sport the consciousness of invention.

Except in that way, and except for salmon fishing, the sportsmen of our country have no time to waste tying flies. The regular shops charge a heavy profit over the amount paid the workman, and if the purchaser is capable of telling a good fly, the best plan is to go direct to the latter, explain what is wanted, and show an interest in the proceeding. A half dozen of each of the foregoing specimens, firmly fastened on strong, round, even gut, will last two months' daily salmon fishing in well-stocked streams. An average loss of four or five a day would be by no means surprising, although a single one might kill a great many fine fish. Hooks are apt to be broken at the bend by striking against a rock, from carelessness, or the awkward handling of too long a line. If you find a hook broken in that way, lay it primarily to this cause, and watch the sweep of your cast.

After the fly is made, tying it on to the leader and the leader to the line is an important matter, and as it is always desirable to put the right knot in the right place, the following directions may do something toward enabling one to effect that object, and after a little practice will be found entirely intelligible. The gut lengths of the droppers should be short, to prevent their fouling round the leader.

No. 1 and No. 2 are both good ties to fasten the leader to the line. No. 3 is a becket-hitch, and No. 4 a double becket-hitch. No. 5 is a single water knot.



No. 6 is a double water knot. The latter are used for tying lengths of gut together. But recollect that before a knot is made in gut it must be wet, and had better be soaked for some time in warm water. In using the double knot, the ends need not be whipped down. No. 7 shows how a dandy fastens his droppers to the leader. No. 8 shows how a lazy man does the same thing.

No. 10 is a reef, or square knot. No. 11 is a granny knot, and you had better not knot that knot as a reef knot at sea. The former never slips, and yet never jams; the latter always slips and always jams. No. 12 is a bowline, the best knot of all.

No. 13 is a wall. No. 14, a wall and crown; follow the strands round with the ends, and it is a double wall and crown. No. 15, a Mathew Walker, is made by unlaying the strands a sufficient distance, and carrying one end underneath and through its own bight, then the next underneath through the bight of the first and its own bight, and then the third underneath through the bight of the first and second and then its own. No. 16 shows the first strand passed; No. 17 is the finished knot. A diamond knot, No. 18, is made by laying the strands back along the rope, then passing the first end over the second through the bight of the third, the second over the third and through the first, and so on drawing all tight. It may be crowned like a wall.

No. 19 is a sheet bend. No. 20, a studding sail bend. No. 21, a rolling hitch. No. 22, a timber hitch. No. 23, a clove hitch. A whipping is put on as shown by No. 24, by first passing the turns over one end, and then the

other end under the last few turns, and drawing it close. No. 25 is called a cat's paw. These knots will probably be sufficient without adding the hangman's knot, with its seven professional turns, and a choice among them will often be found convenient, while a glance at the cut will refresh an imperfect recollection.

In tying flies or hooks, it is well to use varnish occasionally, in fact wherever it can be done without injuring the appearance of the colors; no fly will last well that has not been varnished. In making the wings of salmon flies, it is usual to put on numerous fibres, often of different feathers, and tie them on separately. This renders the wings more pliable, but destroys their beauty and harmony. A number of inconsistent colors will injure the effect of one another; the contrast between body and wings should be decided, and the unity and coherence of the latter should be preserved. If the tip of the feather is used and fastened by the stem, it will slip unless firmly secured. There is great difference in the adhesion of the fibres of different feathers, but a little practice will determine the selection.

Black bass flies are generally made with a red body, gold twist, and wings of ibis and white, or black and white, or peacock's herl and white; but a beautiful and effective fly is made as follows: wings, two plumes of the silver pheasant with two smaller ones of ibis over them; body, blood-red mohair; furnace hackle; blue floss tip; gold tag, and ibis tail.

In salmon fishing it is customary to use but one fly, as two sixteen-pound fish would be troublesome to handle; but occasionally a dropper is added at the

upper end of the casting line to attract their attention.

Three flies are sufficient for trout fishing, and are desirable, although frequently failing to hook the fish in consequence of lying on or close to the leader. This is in a measure prevented by short, stiff gut lengths, but when the rises are mainly at the upper flies, many will be missed.

In this connection it may be well to mention that coloring gut, especially for bright, transparent waters, is an error; remember the fish from below look at it against the sky, and will see it the plainer the more it is colored. The less distinguishable to the angler the more apparent it is to them. This can be proved without difficulty, by holding against the light two strands, one plain and the other colored. For salmon, it should, if single, be round and strong; for trout, fine and delicate.

* Since the above was written, immense strides have been made in this country in the manufacture of fine tackle, while the prices of many articles have been reduced. Our rods, reels and lines are the finest in the world, nothing equal to a split-bamboo rod or an Imbrie reel being produced anywhere. Our lines, both for trout and bass, combine a fineness and strength unknown even in England, which is the birth-place and home of angling.

CHAPTER XXVIII.

INSECTS.

THERE is nothing more beautiful, wonderful and interesting than insect life; there is nothing that offers a wider field for examination or affords more gratifying results. Under the head of insects are classed, in popular language, all the minute animals; but only those having six legs and two antennæ, and which undergo one or more changes or metamorphoses should be included; most of them have wings, and their name is derived from the word *insecta*, divided, which is applied to the divisions or articulations of their bodies. The outer part of their body is slightly bony, and to it the muscles are attached.

Insects exist in myriads; whole families are still undescribed, and many species unknown. Even in the old countries new discoveries are made yearly, and in the New World it can hardly be said that anything is authenticated on the subject. Facts concerning the commonest are most remarkable. One class of white ants, like our southern fellow countrymen, makes slaves of a darker race. Many beautiful flies live only a few hours. The eyes of the common house fly are composed of numerous surfaces or lenses, and their life, habits and instincts are a study in themselves. Being so numerous

and so nearly allied, their classification is entirely imperfect, and like a similar attempt with any other part of animal life, a failure. Almost every scientific writer has invented a system of entomological distribution for himself, and their united efforts have produced endless confusion; the arrangement generally followed is that of Latreille, the father of modern entomology.

Insects are by him divided into two great divisions: those that live by chewing, *mandibulata*, and those that live by sucking, *haustellata*, whence the name applied to some of the human family. Of the former the beetles, *coleoptera*, are prominent, and among the latter the butterflies, *lepidoptera*. It is to be observed that the bees, although furnished with a sucking apparatus to collect honey, feed with mandibles, and are in the first class.

Latreille further divides the various groups as follows; and although English authors have made many changes, the alterations are of such doubtful utility that the original classification will be retained.

The first class is that of insects without wings, such as the *thysanura*, or those having a bushy tail, which are mandibulate. Parasites or lice, and fleas, both of which are suctional, the last having a metamorphose, but the first two not. All others have wings, but the second class includes those that have a hard covering or case, called an elytron, over their wings; the beetles, which have a horny wing cover and perfect metamorphose; the *dermoptera*, which have a horny wing cover but an imperfect metamorphose; the *orthoptera*, or straight-winged insects, their wings folding longitudinally, and having a

leathery cover—all of which are mandibulate ; and the *hemiptera*, which have the wings half leathery and half membranous, and the mouth suctorial, and in both of the latter the metamorphose is imperfect. In the third class the wings are naked and alike ; it includes the *neuroptera*, or nerve-winged insects, in which the veins of the wings are like a net ; the *hymenoptera*, the wings being membranous, and veined lengthwise—both families being mandibulate ; the *lepidoptera*, or scale-winged insects, having delicate scales on the wings—this order is suctorial, and the entire three orders have four wings ; the *rhypiptera*, which are mandibulate and have two balances or halteres before the wings which close like a fan, whence their name is derived, and the *diptera*, which have two halteres behind the wings—in these families there are only two wings.

The *orthoptera* include, as familiar examples, cockroaches, crickets, katydids, and grasshoppers ; the *neuroptera* white ants, May-flies, caddis-flies, dragon-flies or devil's darning needles, and hoodlbugs ; the *hymenoptera* common ants, wasps and bees ; the *lepidoptera* butterflies, moths, silk-worms, and humming-birds ; the *hemiptera* plant lice, cochineals, and locusts ; the *diptera* mosquitoes, house-flies, horse-flies, and bot-flies.

The order *hemiptera* is frequently divided into two, according as the wings are of a uniform texture, *homoptera*, or of a varied texture, *heteroptera* ; the *lepidoptera* are divided into three classes—those that fly by day, and generally have the antennæ knobbed ; those that fly in the twilight and have the antennæ thickened, and those that are nocturnal and have the antennæ slender. The

English writers have transposed the families *grillidæ* and *locustidæ* to suit the popular translation of the Scriptures, and have introduced a separate order called *trichoptera*.

As they are principally minute objects, wise men wisely concluded the deficiency should be made up in length of name, and but one class appears under the weight of less than four syllables. The families composing these orders are almost innumerable, and only those that are allied to the subject in hand can even be mentioned. Amateur entomologists prefer the *coleoptera* for their beauty and variety, and collections of insects are mainly composed of brilliant, gaudy and wondrous beetles, varying in size from the giant, as large as the pretty fist of one of the reader's little female acquaintances, to the pigmy that is hardly perceptible to the eye. There is the beautiful and useful lady-bird, the wonderful lightning-bug, the elephant beetle with trunk and tusks, the hercules with stout heavy limbs, the palm weevil, whose disgusting grubs are eaten as delicacies by the deluded people of St. Domingo, and many other dangerous looking fellows with long sharp snouts that are really harmless, and innocent looking fellows that are really dangerous. The fly-fisher, however, relies for his pleasure mainly upon his imitations of the *neuroptera* and *diptera*, and not so much upon the *coleoptera*.

The young of the insect tribe, when it issues from the shell in the shape of a worm, is known as the *larva*, although the larvæ of some butterflies are called caterpillars, and of certain flies maggots. When the larva begins its metamorphose it is named a pupa or chrysalis.

and the covering with which it surrounds itself a pupa-case or cocoon. It then undergoes a wonderful change, becoming the full-formed insect or *imago*—the ugly worm, that a short time previous had surrounded itself with a silken cocoon, bursting its case and flying off a gay, attractive and resplendent butterfly. From crawling meanly over the ground or the foliage, leaving a slimy streak behind, or horrible with a greenish smooth body and clinging feet, or disgusting with innumerable bristles, it soars away, its gay plumage glittering in the sunlight as it flits from flower to flower, the envy and admiration of the human female sex. How much is there not in beauty !

Many insects live for years as worms, and but a few hours in their perfect state. The *ephemeræ*, so called from appearing in the morning and dying before night, often do not reach half that age, although if the sexes are separated they will sometimes attain the great age of several weeks. They may be regarded as sacrificing their lives for the tender passion. They cover our waters in Summer, warmed into existence by the sun's rays, flitting in a graceful but inefficient way from place to place, or floating calmly upon the surface, dropping back into nonentity with the departing sunlight. They are sometimes, especially in the southern country, quite large, and include what among fishermen are known as the May flies.

In some classes the change from the larva is not so remarkable, the worm having much of the appearance, and many of the distinctive marks of the perfect fly, as for example the bee ; in these the metamorphose is

said to be imperfect. The eyes of insects are either compound, composed of numerous lenses, amounting in certain butterflies to thirty thousand, or simple, called *stemmata*, the latter alone being found in the larvæ, although in some of the beetles the larvæ have eyes in the head and tail both. They are often long in maturing; one species of locust, as is well known, remains seventeen years before coming to perfection, and many other families continue several years as larvæ. Some of the larvæ live in the earth, some in wood, and others under water; some hide themselves in a cocoon ere their metamorphose is effected, others build houses of stones or sticks, others have no protection; but all are wonderful. One swims upon the water, another walks upon its surface, a third crawls along at the bottom, although the majority live upon dry land. In defence they use a sting, simulate death, eject a poisonous liquid, or emit an offensive smell. The eggs mature in the running or stagnant water, in the ground, in the limbs of trees, in the foliage and stems, or in the fruit. Grasshoppers in the East, grubs among savages, snails among Frenchmen, ants among Brazilians, locusts among prophets, and, if all reports are true, certain minute parasites among Italians, have furnished pleasing and nutritious food.

But of all the marvels of insect life, that which is least consonant with nature and least credible to human understanding, is the fact that they appear spontaneously. Why should a few drops of rain in a dusty road produce animalculæ never seen before? Why should a little permanent dirt originate two distinct parasites, according as



WEAK FISH (*Otolithus Regalis*).

it accumulates on the head or body? Why should new insects year after year make a perpetually changing warfare against the farmer's crops in gradation with the exhaustion of the soil? Why should the Hessians bring the Hessian fly, or *vice versa*, as you please? And a great many other Whys which never have been and never will be answered till the "heavens shall be rolled up as a scroll."

Insects feed voraciously on leaves, vegetables, fruit, on human blood—sad to relate—and fortunately on one another. Mosquitoes, thank Heaven, have parasites that cling to the delicate rings of their bodies, stinging the arch-stinger, and inflicting by their venomous bites the same agonies the sufferers inflict on others. It is to be hoped those gentlemen will increase and multiply, and after exterminating mosquitoes may pay their addresses to the black gnats. Certain families, especially of the *coleoptera*, emit a species of phosphorescent light in the dark, occasionally light enough to read by. The majority of insects have wings, but many have not, and in some only one gender is winged. A few kinds, such as the locusts, katydids, crickets, death-ticks, emit sounds, to which man's sympathies have added either a pleasant or painful association, and produce these peculiar cries generally by rubbing the wings or some part of the body. The wings of insects do not exceed four, and are often limited to two; their legs are six; some have antennæ or feelers, others long whisks from their tails.

The *neuroptera*, or net-winged insects, *florfliegen*, gauze-flies, as they are called by the Germans, include the principal pets of the fly-fisher. Their bodies are long,

tapering and delicate ; their wings, four, almost transparent and marked with net-like veins. They keep in continual motion for the purpose of catching smaller insects, on which they mainly feed, and generally deposit their eggs in the water, where the grubs live from one to two years on plants or other insects.

That most fearful looking, but really harmless and beneficent creature, the devil's darning-needle, or dragon-fly, *libellula*, is a remarkable specimen of this family. They are called *demoiselles* by the French, *wasserjunfern*, water-virgins by the Germans ; but, in spite of these pretty appellations, are the tyrants of the surface of the ponds ; they seize and tear to pieces all other insects, including butterflies and mosquitoes, and will clear a house of the common fly. They are cruel, rapacious and insatiable, and I do not know of their ever being used as bait for trout.

The *phryganea*, or water-moth, is one of the favorites of the fly-fisher. Its grubs surround themselves with a case formed of wood or grass, and are used by him as bait under the name of caddis-worms. They are the favorite food of the trout in early spring. But the *ephemeridæ* include most of the specimens imitated by the fisherman. The larvæ of these live in the water, for one or more years, and then, swimming to the surface, suddenly change into winged insects, delicate and beautiful. They sometimes appear in myriads, their dead bodies covering the water. A few make a second change after flying about for a time, and crawl out of their skins once more, leaving their old clothes, to all appearance perfect, sticking to a tree or fence. On their first appear-

ance they are said to be in the *pseudimago* state, and to them the name duns is applied by the fly-fisher; when they change to the *imago* or perfect fly, they are called piscatorially spinners. There are exceptions to this uniformity, as with the May-flies; the green drake is the *pseudimago*, and the grey drake the *imago*.

The *phryganidæ* and *ephemeridæ* are easily distinguished; in the former the wings lie close along the back, projecting beyond the body; the antennæ or feelers are long, and there are no whisks; in the latter the wings stand upright from the body like a butterfly's, the antennæ are very short, and there are two, or occasionally three, long delicate whisks.

The *phryganidæ* attach their eggs to the foliage overhanging the water, whence upon hatching the larvæ fall, and immediately proceed to construct, of twigs or gravel, miniature houses like a snail's shell, where they reside in peace and safety. These cases are lined with silk, spun from the insect's mouth, and are so light as not seriously to impede its swimming and rambling in search of food, and being open at both ends, allow him a view of the outside world. The larvæ live mainly on aquatic plants, and when the proper time arrives, they close the ends of their houses with a species of grating, and commence the dormant state of the pupa. In this they remain a few days, and then emerging from their case, they ascend to the surface, burst their skin, and fly away in their perfect state of beauty.

The *ephemeridæ* deposit their eggs in the water, where they soon hatch, and where the grub, which lives usually on clay or vegetable matter, resides, occasionally for

several years, hiding under stones or in holes in the mud. It then becomes a pupa, and after accomplishing its time, rises to the surface, throws off its skin, and flies away, bearing the name of dun; it shortly alights on a tree or fence, and sheds its entire skin, withdrawing even its delicate wings and minute whiskers from their previous covering. Its colors in the second stage are usually more brilliant, and under the name spinner it enjoys the pleasures of life, perpetuates its species and dies in a few hours. While laying its eggs, it will be noticed either resting on the water or floating up and down over it. Certain species can swim well under water, and I believe descend to the bottom to deposit their eggs. I have had numbers alight on my pants when I was wading a rapid stream, run down my legs to the bottom, crawl over the stones, and with a zig-zag motion swim against the current to the surface. Rocks are frequently seen darkened with flies, that on any sudden approach drop into the water and disappear.

The *ephemeridæ* include the blue dun, which becomes the red spinner in its final state; the marsh brown, which changes to the great red spinner; the turkey brown, that is transformed into the little dark spinner; the iron blue dun, that becomes the jenny spinner; the green and grey drakes, the July and August duns, and many others. The *phryganidæ* comprise the sand and cinnamon flies and the grannom or green-tail, besides many undescribed. Of the *diptera*, which are distinguished by having but two wings, we have the cowdung-fly, the golden dun midge, and the black gnat; of the beetles, the peacock and fern flies and marlow buzz; of the *hymenoptera*, the

red ant and orange-fly; and occasionally crickets and grasshoppers are imitated.

These are a few, and but a few, of the beautiful insects that sport around or upon our lovely lakes and streams; the advancing heat of Spring warms them into life; they burst forth, enchanting man with their beauty, and gaily pass a few days or hours, surrounded by innumerable dangers, which they seem never to heed. One kind succeeds another as the summer advances, usually the more gaudy during the greatest heat, till they crowd the ponds, the air, the bushes with indescribable brilliancy. I have seen, toward evening, yellow sallies appear in myriads, their dead bodies literally covering the water; and in the St. Lawrence rivers, dead eel-flies lie in such masses as to give the effect of sea-weed.

It is very desirable that fishermen should, for their own sakes as well as the sake of science, pay more attention to the habits and peculiarities of these insects. The study of nature in its minute productions is wonderful; the observations of individuals combined is of great value, and adds immensely to the general store of knowledge; something more would be effected than the mere pleasure of taking a large mess, and the reproach of idleness removed from our enjoyments. To be sure, the men of science, by the use of ridiculous foreign names and the confounding of a confused and worthless system, have done all they can to discourage such an undertaking and repel such aid; but every one can note the peculiarities that are heretofore mentioned, can even readily preserve a specimen and mark the times and manner of their appearance and the length of their duration, and

though he may fail to obtain the scientific name, can determine the species and ascertain the habits of a few members of the most wonderful, intricate, and interesting portion of the creation.



CHAPTER XXIX.

CAMP LIFE.

ONE of the most important matters that demand the sportsman's attention, is the equipment he should take with him to make his life in the woods pleasant. He will have many annoyances and even hardships to encounter, and should be as well prepared to meet them as circumstances will permit. The following directions are founded upon the idea he intends to retire to the wilderness, far from the abode of man, where he will have to trust for his support to his own exertions, and although many of them may seem superfluous, and to the robust may savor of effeminacy, to those who desire real comfort they will prove acceptable.

The great pest of the wild woods is—not tigers nor panthers, not bears nor wolves, not even snakes—but something far smaller but infinitely more terrible—THE BLACK FLY! If it were possible for the uninitiated to conceive or the pen to describe the horrors conveyed in these words, I should endeavor to record them. Think of the rack, the boot, the thumb-screw, the wheel; think of being rent asunder by wild horses, or torn in bits with hot pincers; think of the tortures of the inquisition, or the cruel fanaticism of India, and smile; they do not compare with the black fly. When mosquitoes hover

round you day and night, when they fill the air you breathe and deafen your ears with their hum, when your hands, face and body are covered with itching lumps, it is hard to bear. But mosquitoes are comparatively quiet in the sun-light, and are partially affected by smoke; they can be influenced by a smudge, can be frightened off and sometimes killed; they do not compare with the sand-fly.

The latter, almost invisible to the naked eye, comes in absolute myriads; it settles upon every inch of exposed flesh; it creeps into every crevice; it cannot be frightened away, but must be brushed off; its worst attacks are at night, when tired nature is pining for a little rest; its bite does not itch, but burns like fire, till face, hands and neck feel as though they had been scalded. But the sand-fly, bad as he is, can be persuaded out of your tent by a fire; he does not abound except in sandy localities; his bite does not draw blood, nor raise a lump, and is not permanent; he does not compare with the black fly.

The latter comes without a warning note; he bites till the blood runs in a stream, and inflicts the sharpest pain; he clings fast till he is absolutely rubbed off, and crawls up your sleeve or pants or down your neck; he loves not the fire, nor fears the smoke; he cannot be enticed nor driven away. The mosquito comes numerous as the rain-drops in a shower; the sand-fly as the motes in sun-light; but the black fly like the sand of the desert when the simoom is raging. Resignation can endure the first, stoicism the second, but nothing the last.

All three of these pests are found abundantly in the woods, and without being prepared for them, instead of

pleasure, the sportsman's trip would be one long torture. People have been known to be completely disfigured by their bites, and I have had my neck as thoroughly girdled as though it had been done with a hot iron. Their bite inflames the blood, and if accompanied with the free use of ardent spirits, may produce unpleasant consequences. Let no man through foolhardiness brave their attacks, thinking he can rough it and not give way before such pitiful insects; as brave and strong men as ever lived have had their pleasure destroyed by these curses of our country, and he will repent his rashness, if not in sack-cloth and ashes, in blood and misery. I have seen a hard-working man so worn out by their attacks as to fall fast asleep standing up leaning against a rock in a hot July sun, that by its excessive warmth had for the moment driven the torments away. He wore a veil, but not being properly arranged, the flies could climb up its folds, and it was little protection.

One may well ask how is it possible to defend oneself from such irrepressible villains; nor can it be done perfectly; with the best precautions there will be enough to try nerve and temper. Gauntlets of leather drawn above the wrists over the coat sleeve will, though rather warm, effectually protect the hand, and when oppressive, may be cooled by being dipped in water. A veil is the best thing for the face; a piece of elastic run round the top will enable you to slip it over your straw hat and fasten it above the brim, which will keep it out from the face; a spring wire or whalebone hoop sewed in a few inches below, will keep it off your nose, and another piece of elastic round the bottom will hold it tight around

your cravat, so that the flies cannot make their way beneath it; or the latter may be omitted to enable you to wipe your face and rub off those stragglers that will find their way in, notwithstanding your precautions. There is a light substance called tissue, that makes a cool but delicate veil, and is preferable to the ordinary barege, and for mosquitoes and black flies, bobinet is still lighter, but sand-flies might pass the meshes.

Various ointments have been tried with partial success; among them, tar ointment has lately become conspicuous, as also oil with a few drops of creosote, but my favorite has always been a mixture of the oil of pennyroyal with an equal amount of almond or sweet oil; this is both cleanly and effectual, and need only be renewed once a day. But remember it must be the oil and not the essence of pennyroyal, which latter is utterly worthless. Care must be taken with it, as with the others, not to let them run into the eyes, as they will produce unpleasant smarting. This composition is death on black flies, and quite successful against mosquitoes; but it is well, also, to be provided with tar ointment, which will not spill if the bottle is broken.

For clothes, the best suit is of strong duck, heavy enough to resist an able-bodied mosquito, but as loose as possible, so that warm flannels, of which every description should be taken in abundance, can be worn beneath. Flannel coats, shirts and drawers or pantaloons can be crowded into a small space, and are excellent for keeping out cold, and are not rendered unpleasant by moisture. It must be borne in mind that the Summers in Canada are occasionally absolutely cold, and for weeks

in July, I have shivered in every coat and flannel I had with me.

Moccasins are the things for the canoe, but if you try to clamber over rocks or wade streams in them, your feet will be bruised and cut severely. It is advisable to wear stout ankle gaiters that lace up, with heavy iron-nailed slippers that may be fastened with a strap and buckle over them, after you have left the canoe, and by means of which you can cling to the rocks without slipping so frequently as you otherwise would. You will wear a straw hat, of course, and where mosquitoes are not innumerable, your flannel underclothes will make a delightful boating suit. Never use anything but woollen socks for any sort of hard walking, and by having your net handle shod with iron, and carrying it in one hand, you will make your way among the slippery rocks with comparative safety.

The bedding should consist of plenty of blankets, and one or two of them coated with India rubber and rendered waterproof, to keep off the moisture that will always rise from the ground at night, to wrap the rest of your clothes in, and to protect them and yourself from rain and wet. A stout leather strap and buckle is necessary for the latter purpose. The best tent is a circular one without any ridge-pole, but supported by a rope run through a pulley attached to three long poles cut in the woods, and placed in the shape of a tripod above. The pins are driven into the cloth itself, and hold it so close to the ground that no insects can penetrate beneath, while a flap effectually closes the door. There is a hole for ventilation at the top, which, in a rain, may be closed

with a canvas cap. A stout post may be set up in the centre with a few nails on which to hang clothes. This tent should only be used at a permanent camp; and for travelling, the ordinary tent with a ridge-pole, as more accurately described hereafter, is preferable; a piece of oiled cloth laid over sticks planted slanting in the ground, will keep off the rain and dew.

A round tent of twenty-four feet in circumference will not accommodate more than two men luxuriously, whereas one of double that circumference will hold five times the number. A large tent is a great comfort and not much trouble. A separate tent should of course be taken for your men, and another simple one for a make-shift and a dining-room. To arrange the latter is your first care on arriving at your permanent camping-ground, the table is of bark, either birch or spruce, nailed fast to posts, and shielded by some protection from the rain; the seats are either a large log or the barrels you have brought with you to carry stores and fish, or else stools ingeniously chipped from the trunks of trees with the branches for legs. A dressing-stand is then arranged, with a wash-basin made of birch bark; the fire-place is rigged up with a ridge-pole supported on two notched sticks, and with a hooked withe to support the kettle, and your sylvan home is furnished.

To support and gratify the inner man, it is well to have with you all conceivable little delicacies, such as nutmegs, allspice, preserved fruits, meats and vegetables, sweet oil, lemons and raisins, sardines, chocolate, citric acid and ginger; but the necessaries are clear salt pork, flour, rice, oat-meal and Indian-meal, coffee, tea, brown

and white sugar, red and black pepper, fine and coarse salt, butter, sauces, preserved and fresh eggs, solidified milk, ales and ardents according to consumption, potatoes, smoked beef, pickles, piccalilly, matches, the essence of coffee, bacon, ham, dried beans and peas, hominy, cigars, onions, bread, crackers, molasses, tobacco, desiccated meats and soups. Many of these articles may be advantageously stowed in the barrels intended for packing fish, but the butter should be put up in air-tight jars in small quantities, and may in hot weather be buried under water in the sand. The oil tried out of the pork is usually used for frying; but if you have sufficient butter the latter is infinitely preferable.

For cooking you will need an iron pot and boiling kettle, tin kettles fitting inside of one another, a frying-pan with a handle like the kettle, a coffee-pot, some knives and tin plates, cups, spoons, forks and deep dishes, and above all an oyster broiler. The latter has thin wires, and, having two surfaces, can be turned more readily than a gridiron. It should be used extensively: fish and game split open and broiled, well basted with butter, are undeniable, and will be found a pleasant change from the eternal fry. Large fish may be boiled and served up with a little of the liquor strengthened with a teaspoonful of Worcestershire sauce. The greatest difficulty will be found with the bread; the latter may be kept a couple of weeks, and when excessively dry, by steaming in the pot will be rendered eatable, but not good. Ship biscuit must be the main reliance for a long tramp. Before taking your departure, if you could obtain a few lessons in cooking from some elderly lady friend whose

youth has not been so entirely devoted to dress as to prevent her knowing something of her household duties, and will carry with you a few simple recipes, you will not regret it.

As no one can be certain of perfect health or freedom from accident, it is well to be provided with plenty of sticking and court plaster, cholera medicine and Rochelle salts; but generally the fine exercise and open air are a brave preventive against sickness. Do not forget brown soap to wash the dishes, candles for light in the evening, and cream of tartar and soda to make the flour rise.

The most necessary tools are an axe, a hatchet, one of Aiken's patent diminutive awl tool-chests, with which to mend broken rods, needles and thread to mend torn clothes, some rosin to mend the canoes, and a supply of various sizes of nails for numerous purposes, while a file and sharpening stone will be found useful additions. An india-rubber water-proof bag is admirable as a receptacle for clothes or blankets, which should be heavy, and a tin wash-basin and an air-pillow will be great additional comforts. Fresh eggs may be conveniently stowed in the barrels of coarse salt used for curing fish.

Of the foregoing there are none you can comfortably omit, and besides them there are plenty you would do well to have; but the judgment and taste of each individual will suggest the additions.

As one of the first objects will be to preserve the fish you catch, a preparation of eight ounces of sugar, two ounces of salt, half an ounce of brown pepper, well rubbed into fish from which the back bone has been removed, and which are allowed to dry in the sun, will

preserve them over a month. They should be packed in barrels with layers of bark between, and will prove more edible than when simply smoked ; by smoking they may be kept for years, and the fisherman long have the proud pleasure of offering to friend at breakfast a little of the salmon he killed and smoked himself the previous Summer in Canada.

In warm weather, fish merely salted cannot be kept long, and pickling in brine utterly destroys their flavor ; but if the latter method must be adopted, a pickle of two parts salt and one part common brown sugar will keep them forever. Before cooking, however, they should be well soaked. Pickling in vinegar with a few cloves is probably the best mode where it is possible.

The gum for mending the canoes—and it is surprising how large a hole it will fill—is made of one part rosin to three parts balsam gum, fused together. If the aperture is very extensive, a piece of linen saturated with melted gum should be applied. In New Brunswick and Maine it is usual to mix rosin and grease, which answers every purpose.

To smoke fish, it is necessary to salt them in a tub, where they can form a brine, and leave them thus for two days, and then hang them in a smoke-house, not too near the fire, for as many weeks, when they are to be packed in layers, separate. Fish are soured by being partially boiled, and having vinegar boiled in copper kettles mixed with allspice and poured over them. Iron turns the vinegar black, and hence this mode cannot be pursued in the woods. Small fish may be headed, cleaned and packed in a jar, which is then filled up with

vinegar and allspice and baked all night. Next day fresh vinegar is added to make up for the evaporation, and lard is run in to exclude the air. They keep well and taste excellent.

An air-tight can is now made, with a cover that fits into a trough which can be filled with melted rosin. This may be used over and over again, and is peculiarly adapted to the woods. It must be hermetically sealed while the contents are boiling, but without sealing might be advantageously used to protect sugar and such things from the wet. The same cover is applied to brown earthen jars, which are well suited for carrying butter.

Literature will be found a great resource in the woods, and although Harper's last Monthly may be permissible on account of the shortness of its stories, nothing should be taken of too interesting a character, lest it divert attention from the main object in view. This work will be found extremely safe.

In giving the foregoing directions it is assumed that the reader intends to travel with canoes, and does not expect to make any extensive portages, or, as they are called in American, "carries;" for if the men are expected to back the traps for any considerable distance, the only admissible articles are fishing-tackle, penny-royal, an axe, the tents, pork, ship biscuit, tea, sugar, pepper, salt, tea-kettle, matches and a frying-pan. The slightest weight becomes a mountain on such occasions, and it will require stout muscles to carry enough for their own sustenance. In salmon-fishing this is rarely necessary, unless a man would be an explorer, and the adventurous are always sufferers.

As it is possible none of my reader's female acquaintance have ever soiled their rosy fingers—Heaven save the mark!—with domestic cookery, an outline of the theory of that science may be advantageous. There are certain well known rules that have no exceptions, unless in the hands of a genius, and which apply to classes and divisions of edibles. For instance, a little salt must always be thrown into the water before anything is boiled in it. Thus, again, with the great class of fried cakes: milk thickened with flour, and an egg or two, and a pinch of salt, makes griddle: add squash, boiled and mashed, and you have squash cakes; employ boiled and mashed rice in place of squash, and there is produced the delicate rice cake; introduce Indian-meal, which has been first scalded, and you have Indian cakes. This class of cakes is made by pouring the preparation, in large tablespoonfuls at a time, on a greased griddle or frying-pan. In broiling, frying, roasting, baking, or stewing, salt and pepper are first rubbed on the article to be cooked; in broiling, baking, or roasting, it is basted with butter or grease, and in frying the butter is first put in the pan and heated. Potatoes boiled, and cut thin when cold, are delicious fried. In stewing, a little water is poured over the meat, and the cooking is done with a cover on.

Frying is with butter or grease alone; stewing with grease and a little water; and boiling with water alone. You determine when things are done by the color and trying how they resist a fork. An excellent chowder is made by putting pork, fish, cracker, meat, clams, and anything else that is handy, with vegetables, sufficient seasoning, and a little water, and stewing it well. Stew-

ing can hardly be carried to excess, as from the closeness of the vessel the nutritious particles cannot escape.

The best omelette the tyro can make, and excellent it will be found, is by frying eggs, which are first beaten up and seasoned, till they are not quite firm. They must be stirred all the while to keep them from burning, and if they are done hard are ruined.

A white sauce is made of flour and butter well mixed together, stirred into hot water and allowed to boil for a few minutes; a hard boiled egg may be chopped up and added if desired. This is the appropriate sauce for salmon. A brown gravy is made from the drippings of the meat, and some burnt sugar or browned crumbs added and warmed up.

The following is an accurate recipe for griddle cakes : one pint of boiled rice, three tablespoonfuls of flour, two tablespoonfuls of milk and two eggs. While for fried cakes it will be observed that flour, milk and eggs are used, for ordinary cakes flour, butter and eggs are necessary, with sugar added for sweetening. Thus, a good cake is made of five cups of flour, three cups of sugar, two cups of butter and four eggs. This cake must be baked slowly, which could be done in a piece of birch bark inclosed in heated stones, allowing room for it to rise.

The simplest and best way to boil a salmon is to slash him on the sides with vertical cuts to the bone, having previously drawn, opened and cleaned him, to wash him well in the nearest spring, put him into boiling water sufficiently salt to bear an egg, and cook him seven or eight minutes to every pound of weight, and serve him

with some of the water he was cooked in for saucc. The latter may be thickened with flour and butter. He should, like all other fish, be cooked fresh.

Broiled fish, or, if they are large, slices of fish, cook better wrapped in a piece of paper oiled ; and the one-half of a salmon spread out, tacked on a board and roasted by a hot fire is excellent ; and in cooking small fish suspended by a twig near the fire, Frank Forester recommends that a small stick with a piece of pork threaded on it, should be inserted to keep the belly open, and a biscuit placed below to catch the drippings. A hot fire will cook a fish thus in ten minutes. .

To bake a fish he is wrapped in oiled paper or birch bark, and placed in an oven built of stones laid in a hollow, and from which the fire has just been removed, other heated stones are placed above him, and the fire is raked back over the whole.

It will be hardly necessary to remark, in connection with these directions, that fish must be cleaned and have the gills removed and be well washed and scaled before they can be cooked ; that when the word butter is used, and my reader have no butter, he must use such grease or oil as he may have ; that in all cases he can add such sauces and spices to his condiments as he may relish and possess. Among all the variety of prepared sauces, anchovy for salmon and Worcestershire for meats are the best, but lemon alone gives an excellent flavor.

To bread anything, whether it be fried oysters or fried eels, dip them in the yolk of egg beaten up, and then in cracker pounded fine, or they may first be dipped in flour and afterward in egg and cracker.

Tea is made by pouring a little hot water on the leaves and allowing it to draw by the fire for ten minutes and then filling up with hot water. Coffee, by putting the coffee, mixed with the yolk of an egg, into boiling water and allowing it to boil once—no more, on your life. If you do not wish to use an egg, put in a teaspoonful of cold water immediately on taking it from the fire. This is done to clear it. Chocolate is made by melting a cake broken into small pieces in warm water, adding a cup of milk after it is perfectly smooth, and boiling for twenty minutes. An excellent tea is made of yellow birch bark.

Bread, especially if it is a little stale, is much improved by toasting, which should be done by approaching it close to the fire, even throwing it on the coals and burning the outside almost black. If buttered and covered with brown sugar and eaten hot it makes an excellent dessert.

If salt pork is to be broiled, it should be cut thin, and may be soaked well in water, dipped in Indian-meal, so as to bread it, and then broiled or fried brown. It can be used in soup by being boiled in two waters.

Smoked beef is good if stewed a few minutes with a lump of butter mixed with flour and enough milk to cover the whole, which may be seasoned with pepper. Fried fish that has become cold can be revived in the same way ; the flour may be omitted and some salt must be added.

An onion may be boiled in bread sauce, and removed before serving, or pepper may be added ; celery chopped and cooked in a stew or sauce adds a peculiarly pleasant flavor. Tough meat of all kinds should be stewed, and except salt pork, meat should be rarely fried. The fore-

going are soon acquired by practice, and experience will suggest many valuable alterations; but they are all the directions necessary to make camp life not merely comfortable, but by the aid of a good appetite extremely pleasant. Cookery is no mean science, and a knowledge of it will prove interesting and advantageous not only in the wilderness, but so long as Irish cooks shall rule our kitchens and ruin our digestions, in the realms of civilization.

To unite economy in space and weight with the utmost amount of accommodation, the following sized tents will be found to answer for two fisherman and five guides or even four fishermen.

The tent of the gentlemen should be four cloths deep, each cloth of twenty-six inches, and cut twenty feet long, so that there should be ten feet on each side of the ridge-pole; the wall takes about three feet, at the upper edge of which a small piece is tabled in where the bolt-rope passes, to shed the rain. There is an extra strip of canvas along the ridge, with two small grummets in each end, inside the tent, to receive the poles; but there is no bolt-rope except along the wall, and there must be no cross seams, as they are sure to leak. A shoulder is left on the poles, which are thrust into the grummets and a spreader is forced up between them and sustained as a ridge-pole by a notch cut in each. There are three tent ropes on each side, with a stout line and toggle, or button where they join the tent, to trice up the walls in warm weather; the doors, which are at both ends, lap well over, and are secured by a strong galvanized hook and eye, and are closed with strings. Along the bottom

of the wall are rings to peg it down, and the width is the same as the depth. This tent sets up eight feet high, and is quickly pitched if the poles are retained, which can be readily done, as they are convenient in the bottom of the canoe to keep other baggage from the wet. The size may be diminished to eight feet square, but will be found rather cramped, especially in wet weather, when the fisherman is more or less compelled to stay indoors, and will not permit of what is often desirable, accommodating a visitor.

For the men, a simple strip of canvas eight feet square, with sloping sides, is all that is required. In fact, in cold weather an open tent with a fire in front is preferable to all others, and can be kept as warm as an oven. A Sibley tent has many advantages, but must be large, and is troublesome to transport. In cold weather, logs should be cut down and laid up with mud like a hut, or boards driven into the ground close together to form the foundation, and the tent set over them. It will be warmer and more roomy.

Where there is naught to be shot, and as little to be caught, no man has any business in the woods; but as bad marksmanship or scarcity of game may cause the first, or a rise of water the second, it is well to know that a pound of biscuit and a pound of pork per day is all that a man requires for his support. A fair allowance however would be, considering it merely as an addition to the proceeds of the gun and rod, a pound of biscuit or bread, and half a pound of pork. Where flour is taken the amount of bread may be reduced; but as the staff of life occasionally becomes wet and moldy, it is

better to be well supplied. Half a pound of solidified milk will last one man ten days, a pound of tea thirty, and half a pound of tobacco one week. Eight pounds of brown sugar, the same of butter, a bushel of potatoes, and two gallons of molasses are sufficient for two anglers and five men one week. It is not customary to give men milk, sugar or coffee ; they are carried only for the gentlemen, and the above calculations are made on that footing. These computations may be relied on, and will be found extremely useful ; although the luxuries of camp life may fail, the necessaries must not be exhausted. There is no fun in having to send a couple of your best men fifty miles for provisions, when salmon are rising or a long journey is to be made. Time devoted to pleasure is precious ; a day wasted is indeed a loss.

And now, good reader, farewell. In looking over this book, I perceive how far short I have fallen of my own expectations, and feel how greatly I must have disappointed yours. Much has been badly said, much omitted, and no doubt much unintentionally misstated. Opinions differ, and experience leads to contrary results. There are game fish, and modes of taking them, with which doubtless I am unacquainted, and yet I hope you will find something here that has not been written before. My aim has been to induce sportsmen to study the habits and proper designation of the different varieties of game they pursue, to apply the appropriate names and distinguish the various species. My hope is to elevate their

purpose above the mere indulgence of that peculiar innate pleasure experienced in the chase, and at the same time, if possible, to press upon the attention of naturalists the vast assistance they might obtain from their humbler brethren by reducing their language to the standard of ordinary comprehension; and above all, to insist, by every consideration of humanity, upon the absolute necessity of preventing the cruel, wanton, and untimely destruction of the beautiful inhabitants of our woods and waters. These have been my objects; it is for you to judge how far I have succeeded. But, reader, let me warn you: neither praise nor dispraise overmuch. In either case I shall write another book, to justify the former or disprove the latter.



APPENDIX.

FLIES, RODS, REELS, AND LINES.

Since the body of this book was written, the tackle-makers have taken it into their heads to give the fishing world the most wonderful assortment of flies that the mind of man could have conceived, and far beyond anything that nature could in her most festive moods have produced. I give them not because I believe any such assortment to be necessary for the angler or tempting to the fish, but because they are so wonderful in themselves and so very attractive to the tyro who fancies that beauty of tackle is going to produce fulness of creel. I am indebted for them less to my own knowledge than to the kindness of Mr. W. Holberton who, to excellence as a fly-fisherman, has had the good fortune to add experience in the business. So firmly have some of them established their reputation that a modern book on angling would not be complete without them.

The strongest flies are tied with reversed wings, as they will last much longer. Use highest-quality sprout hooks and selected white or mist-colored gut snells. Salmon flies are now often tied on small double hooks, instead of on large ones, as formerly. For salmon flies even more care should be taken in choosing the gut, as not only is the fish larger, but the loss of a salmon is more serious than the loss of a trout.

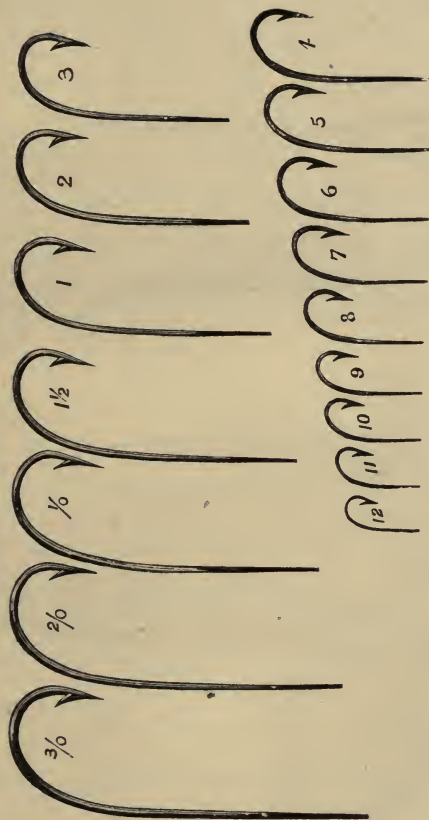
The following list comprises all those of any value sold in the shops, whether copied from nature or evolved from

the inner consciousness of the tackle-maker. For the smaller streams in the Middle and Eastern States, the coachman, royal-coachman, grizzly-king, Abbey, Montreal, Imbrie, brown-hen, white-miller, orange-miller, yellow-sally, black-gnat, great-dun, queen of the water, Hooker, golden-spinner, Cahill, silver-black, professor, march-brown, jenny-spinner, red or dun fox, silver-brown, hare's-ear or dark-fox, blue-dun, dusty-miller, coch-y-bon-dhu or marlow-buzz, gray-gnat, cow-dung, Beaver-Kill, grannom, Ronald's stone, brown-stone, and the various colored hackles. On some waters the addition of jungle-cock's feathers to the above will prove very killing.

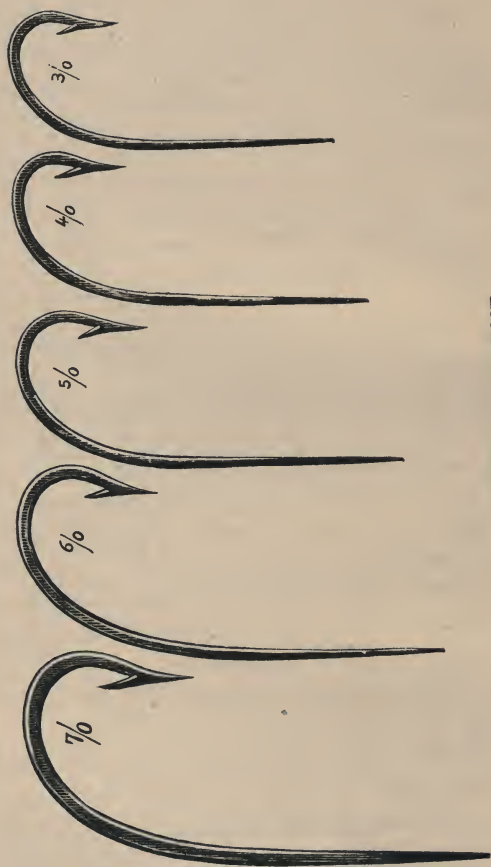
On Long Island waters the favorites are the cow-dung, scarlet ibis, Cahill, Imbrie, yellow-sally, great-dun, hare's-ear, queen of the water, black and gray gnats, golden-spinner, silver-black, grizzly-king, professor, Abbey, Montreal, and the different colored hackles. Hooks for the above lists should be numbers 8 to 12.

For the Adirondacks, Maine, and the Canadas, light and dark Montreal, Abbey, scarlet-ibis, professor, great-dun, brown-hen, Brandreth, cock-robin or Murray, silver-doctor, Parmacheeny belle, St. Patrick, McAlpin, Lawrence, Holberton, Rangely, Molechunkamunk, Mooseluck-maguntic, Beatrice, No. 8, Round-lake, Bemis, tinselled-ibis, Elliot, Megalloway, silver-black, Canada, blue-jay, Jenny-Lind, and the hackles. Also any of the above, with the feathers of the jungle-cock added. They are to be tied on hooks numbered from 3 to 5, and may be reinforced by a short piece of gut tied in alongside of the other and extending above the hook, making the snell double for half an inch beyond the head of the fly.

For black-bass any of the large flies previously named



SPROUT HOOK.



O'SHAUGHNESSY FORGED HOOK.

may be used, and the following are particularly good: turkey, scarlet-ibis, Page, Brandreth, Fergusson, grizzly-king, Montreal, silver-doctor, Rube Wood, Lord Baltimore, Whitney, Elliot, Rangely, Holberton, humble-bee, Gov. Alvord, and white-miller. The hooks for these should be from numbers 1 to 4. For trolling, the same tied with double snells may be used on hooks from $\frac{2}{0}$ to 1.

For salmon-fishing, the following are recommended: Fairy, Dovey-queen, black-dose, Imbrie's-witch, gipsy, butcher, fiery-brown, bonne-bouche, silver-gray, silver-doctor, orange-doctor, black-doctor, lion, Dunkeld, blue-tansy, gold-finch, dusty-miller, Wilmot, thunder-and-lightning, blue-Highlander, parson, Wingfield-red, Popham, Jock-Scott, and Durham-ranger.

Lines are now made in an endless variety and of a vastly improved quality. For salt-water fishing, linen lines are generally used, as they stand the action of the chloride of sodium better than silk. For heavy work, such as cod-fishing, trolling for blue-fish, and deep sea-fishing, braided and hawser-laid cotton lines are the best. The lines used by the anglers at West-Island, Pasque, Cuttyhunk, and other localities where large striped-bass are taken, are made of the choicest flax, hand-laid of from nine to eighteen threads, and notwithstanding their fineness, are marvels of strength.

For fly-fishing for salmon, trout, and black-bass, the polished enamelled waterproof, tapered, silk lines have entirely superseded the old hair, and hair-and-silk lines. For fresh-water trolling and bait-fishing, there are the hard-braid linen lines and the oiled silk braided lines, and pure boiled or raw-silk for minnow-casting for black-bass, and so forth.

Good leaders are a very important portion for an angler's outfit, and more fish are lost through the use of poor gut and improper snelling than from any other cause. The best silk-worm gut from which leaders are made, comes from Spain, and should be carefully selected, only perfectly round and even strands being used. Anglers should discard any leader or snell that is at all rough or flat, or that has been dyed. Dyeing can be easily detected by its decided color, generally either a blue or greenish tinge, and the process injures the gut. A true mist-colored leader should be without any tinge other than a faint mist or water-color, which is obtained by staining, and not by dyeing.

The hooks now generally preferred by anglers are the highest quality sproat and the forged O'Shaughnessy, the latter being used principally for striped-bass, blue-fish, and channel-bass. For the heavy fishing at Cuttyhunk, West-Island, Newport, and Narragansett Pier, the knobbed and needle-eyed O'Shaughnessy is the favorite. The highest quality sproat is used for black-bass, salmon and trout flies, and is rapidly becoming the favorite hook among expert anglers. The advantage of the highest-quality forged O'Shaughnessy hooks consists in the fact that not only are they made of the choicest steel, but that the forging breaks every hook in which there is the slightest flaw, while the difference in price between them and inferior grades amounts to only one-third or one-half of a cent on a hook, an amount not worth considering under the circumstances. The old-fashioned kirbed hooks are rapidly going out of favor. The sproat has been greatly improved lately, the line of draft is in direct line with the point, which is small and keen, and penetrates a fish's

mouth more easily than a clumsier hook. The barb, too, is small and gives less room for play and does not tear so large a hole as a coarser hook. When fishing with a light rod, this is a great advantage both in striking and playing a fish. In fact it is almost impossible to drive a coarse large barbed hook through the tough mouth of a black-bass with the light rods that are now coming into favor.*

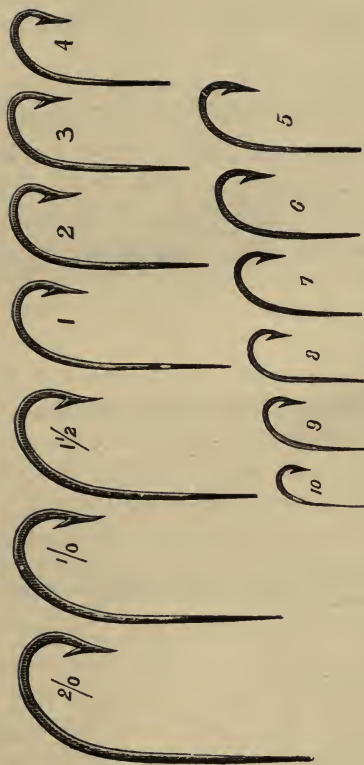
For fly-fishing there is no rod like a well-made round, split bamboo; but to be well made, and no other is really worth having, a round eight-piece split bamboo is an expensive implement and costs a high price. But when well made it is not only a thing of beauty and a joy forever, but will stand an amount of exposure and hard work not to be obtained from inferior rods. It has not always been possible to obtain such implements in their perfection, as some manufacturers who have not had the necessary experience, or who in their anxiety to produce a cheap article have slighted their work, have given the split bamboo rods a bad name. They should be made from the upper part of the canes alone, as in that part the nodes which give them their strength are the thickest. The outside or glazed part of the cane should come on the outside of the rod, and the joints should be so perfect that they cannot be traced by the eye, as if there is the least opening water will get in and destroy the rod. While if thoroughly well finished, they are the best article of their kind, nevertheless greenheart, cedar and lancewood rods all have their admirers, and in skillful hands will do efficient work. Machine-made rods should be avoided by

* Some of the illustrations in this volume have been furnished us by Messrs. Wm. C. Harris, and Abbey & Imbrie.

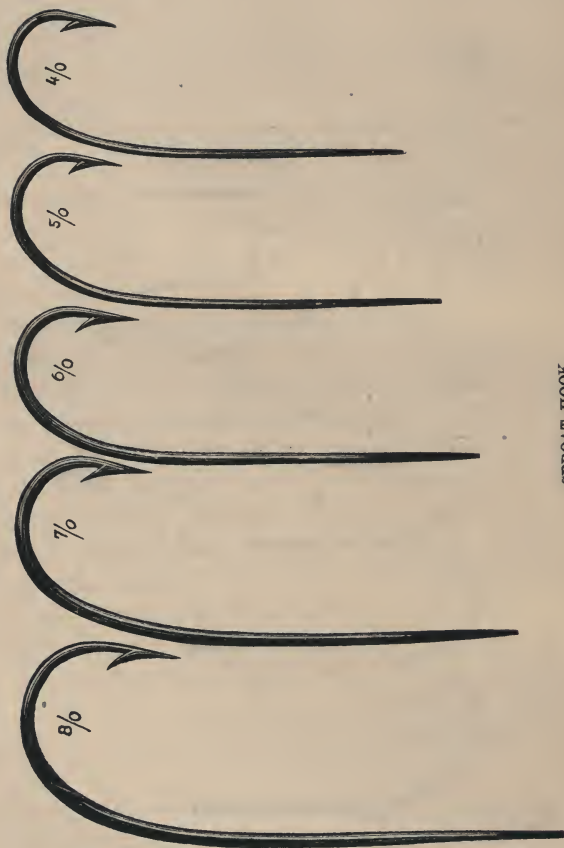
every angler who takes pride in his casting or his tools, no matter how cheap they are. The best proof of the superiority of the bamboo rod is the fact of its general use at all public tournaments where its power has been proved by a cast of over eighty feet with a four and a half ounce rod.

In giving the weight of a trout rod, it should be stated whether the ordinary mountings are included, as they make a difference of several ounces. The fly-rod that in a tournament would be called a four or five-ounce rod, would in the hands of the sportsman be found to weigh nine or ten ounces. When a weight is given in these pages, the full weight of mountings is intended, so that a nine-ounce rod is what the professionals would call a five-ounce rod.

Great strides have been made by professional fly-casters in the matter of length of cast since this book was first written. Then a cast of seventy feet was considered a very long reach, but now eighty-five feet have been cast with a rod of four and seven-eighths ounces, and eighty-seven feet with a twelve-ounce rod. The rods in these cases are heavy at the tip, and are not well adapted to ordinary fly-fishing and would soon tire out the strongest wrist. They are in all instances made out of split bamboo. In bass-casting, that is what is called Cuttyhunk fashion, the public trials have not been satisfactory, the casts not having been scored at much over one hundred and sixty feet. But there is no doubt that with the regulation weight of two and a half ounces, at least two hundred and twenty feet can be cast. To make very long casts with a fly, it is essential not only to have a stiff rod and to fasten on the droppers with short snells, but to put double gut at



O'SHAUGHNESSY FORGED HOOK.



SPROAT HOOK.

the head of the stretcher-fly. Moreover, the flies must not be allowed to sink, but must be retrieved immediately in order to get the line well out behind, which is the great difficulty in distance-casting. In actual fishing the angler is considered an expert who alone and unaided can strike, play and land a five-pound trout or a fifteen-pound salmon. Those are tests of skill that far exceed casting ninety feet in an open pond with a top-heavy rod.

Reels have kept up with the march of improvement in fishing tackle, and are now made much lighter and stronger than in days gone by. Hard rubber has taken the place of metal to a great extent, making the reel very much lighter. Aluminum has been tried, but, though very hard, it is a metal of poor texture, so that the screws do not hold, and the reels soon get loose and shaky, while at the same time it is expensive. There are several patented trout reels for getting large barrels to wind the line on quickly, or to expose it to the air so that it will not rot. Most of the fine reels are made of German silver, and with works as carefully constructed as those of a clock, for the striped bass reels must run with absolute perfection. A valuable invention of Messrs. Abbey & Imbrie provides for the adjustment of the bearings, so that any wear can be readily taken up, and the reel kept in good condition without expense. It consists of the use of steel-screw pivots easily adjusted, which reduce the friction to a minimum.

There is an endless variety of spoon baits now made for the angler to select from; among them the most admired are the "fluted spoons" and the "mottled pearl," including the new Florida pearl spinner, with a body of white pearl, combined with a mottled revolving spoon.

But the old-fashioned revolving silvered plate in its various forms is by no means superseded by these modern mysteries.

The introduction of black-bass throughout the country has created a large demand for artificial baits. Live minnows are often difficult to obtain, and the market is now well supplied with artificial minnows, frogs, dobsons, crickets, beetles, and grasshoppers. Of these baits, the "fairy" is the most successful. It is made of fish-skin, and has the scales of the real minnow preserved. It is as soft and flexible as the live bait, and will kill black-bass and pickerel when every other artificial bait fails.

Of minnow gangs there is also a great variety, the latest and one of the best being the "St. Lawrence" gang. This has a thin baiting needle, which allows the most delicate minnow to live for hours, and has not the usual great number of treble hooks to make it troublesome and unsightly for delicate fishing.

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